USDA United States Department of Agriculture

Natural Resources Conservation Service

Washington Basin Outlook Report January 1, 2000

Basin Outlook Reports
and
Federal - State - Private
Cooperative Snow Surveys

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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

Washington
Water Supply Outlook

January 2000

General Outlook

Washington is starting the season much the same as last year. Early winter rainstorms brought a rise in river levels all across the state. Some localized flooding along with landslide activity temporarily closed several major highways, some for many days. State and federal Meteorologists report La Nina is once again responsible for these persistent conditions. They also report the Standard Oscillation Index (SOI) appears to be slightly stronger than last year at this time. Forecasters say "look for cooler temperatures and LOTS of mountain snow in the near future".

Snowpack

The January 1 statewide SNOTEL readings were near average at 103%. The Ahtanum Creek Basin snow surveys reported the lowest readings at 54% of average. Readings taken in the Newman Lake area near Spokane reported the highest at 148% of average. Westside averages from SNOTEL and January 1 snow surveys included the North Puget Sound river basins with 106%, the Central Puget river basins with 108%, and the Lewis-Cowlitz basins with 110%. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 90% and the Wenatchee area with 77%. Snowpack in the Spokane River Basin was at 102% and the Pend Oreille River Basin, including Canadian data, had 87% of average. Maximum snow cover in Washington was at Paradise Park SNOTEL near Mount Rainer with a water content of 33.3 inches. This site would normally have 23.6 inches of water content on January 1. Last year at this time Paradise Park had 40.7 inches of snow water. The highest average in the state was June Lake SNOTEL in the Lewis River Basin with 151% of average.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	86	102
Newman Lake	93	148
Pend Oreille	68	87
Okanogan	85	108
Methow	58	99
Similkameen	N/A	N/A
Wenatchee	53	81
Chelan	63	98
Stemilt Creek	42	58
Yakima	57	95
Ahtanum Creek	43	54
Walla Walla	47	76
Lower Snake	76	106
Cowlitz	58	95
Lewis	81	124
White	62	104
Green	90	87
Puyallup	62	104
Cedar	65	104
Snoqualmie	87	109
Skykomish	76	101
Skagit	60	102
Baker	76	109
Nooksack	80	108
Olympic Peninsula	44	81

Precipitation

During the month of December, the National Weather Service and Natural Resources Conservation Service climate stations showed a range of below to well above average precipitation for Washington river basins. The highest percent of average in the state was at Fish Lake SNOTEL. Fish Lake reported 196% of average for a total of 15.7 inches. The average for this site is 8 inches for December. Averages for the water year varied from 136% of average in the Olympic Peninsula river basins to 90% of average in the White - Green - Puyallup river basins. The highest individual site average for the water year was 180% of average at Morse Lake SNOTEL site near Chinook Pass.

RIVER BASIN	DECEMBER PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	128	123
Colville-Pend Oreille	108	111
Okanogan-Methow	85	97
Wenatchee-Chelan	110	115
Upper Yakima	160	109
Lower Yakima	123	130
Walla Walla	115	118
Lower Snake	136	116
Cowlitz-Lewis	132	128
White-Green-Puyallup	135	114
Central Puget Sound	150	132
North Puget Sound	113	127
Olympic Peninsula	121	136

Reservoir

Early season reservoir levels in Washington vary greatly due to specific watershed management practices required in preparation for winter collection. Reservoir storage in the Yakima Basin was 588,400-acre feet, 125% of average for the Upper Reaches and 149,200-acre feet , 138% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 129% of average for January 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 111,500 acre feet, 85% of average and 47% of capacity; Chelan Lake, 517,800 acre feet, 137% of average and 77% of capacity; and Ross Lake at 161% of average and 90% of capacity.

BASIN	PERCENT OF CAPACITY	PERCENT OF AVERAGE
Spokane	47	85
Colville-Pend Oreille	76	87
Okanogan-Methow	74	129
Wenatchee-Chelan	77	137
Upper Yakima	71	125
Lower Yakima	64	138
North Puget Sound	90	161

For more information contact your local Natural Resources Conservation Service office.

Streamflow

Early season forecasts indicate near normal summer flows for most streams in the state. They vary from 112% of average for the Baker River near Concrete to 80% of average for Salmon Creek near Conconully. January forecasts for some Western Washington streams include: Cedar River near Cedar Falls, 97%; Green River, 101%; and Skagit River, 105%. Some Eastern Washington streams include the Yakima River near Parker, 102%: Wenatchee River at Peshastin, 102%; and Spokane River near Post Falls, 107%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS.

Streamflows reported for December varied from well above to near average. The Chelan River at Chelan, had the highest flows with 275% of average. The Snake River below Lower Granite Dam with 95% of average, was the lowest in the state. Other streamflows were the following percentage of average: the Priest River, 132%; the Columbia at the International Boundary, 257%; the Spokane at Spokane, 136%; the Columbia below Rock Island Dam, 133%; the Cle Elum River near Roslyn, 155%; and the Snake River below Ice Harbor Dam, 74%.

BASIN	PERCENT OF AVERAGE MOST PROBABLE FORECAST (50 PERCENT CHANCE OF EXCEEDENCE)
Spokane	107
Colville-Pend Oreille	99-105
Okanogan-Methow	80-107
Wenatchee-Chelan	96-107
Upper Yakima	105-107
Lower Yakima	98-103
Walla Walla	100-104
Lower Snake	86-102
Cowlitz-Lewis	100-102
White-Green-Puyallup	100-101
Central Puget Sound	97-108
North Puget Sound	104-112
Olympic Peninsula	107-109

STREAM	PERCENT OF AVERAGE DECEMBER STREAMFLOWS
Pend Oreille Below Box Canyon	115
Kettle at Laurier	257
Columbia at Birchbank	159
Spokane at Long Lake	135
Similkameen at Nighthawk	162
Okanogan at Tonasket	183
Methow at Pateros	200
Chelan at Chelan	275
Wenatchee at Pashastin	166
Yakima at Cle Elum	177
Yakima at Parker	175
Naches at Naches	172
Grande Ronde at Troy	113
Snake below Lower Granite Dam	95
SF Walla Walla near Milton Freewater	138
Lewis at Ariel	135
Cowlitz below Mayfield Dam	142
Skagit at Concrete	134

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BASIN SUMMARY OF SNOW COURSE DATA

JANUARY 2000

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
AHTANUM R.S.	3100	1/01/00	---	3.0E	4.4	3.5
ALPINE MEADOWS PILL	3500	1/01/00	---	21.6	19.3	17.9
ASHLEY DIVIDE	4820	12/29/99	10	2.2	3.7	3.4
BADGER PASS PILLOW	6900	1/01/00	---	10.6	20.5	14.2
BARKER LAKES PILLOW	8250	1/01/00	---	3.3	6.9	6.8
BASIN CREEK PILLOW	7180	1/01/00	---	2.7	5.0	3.6
BERNE-MILL CREEK (d)	3170	12/30/99	29	8.9	17.3	11.2
BLACK PINE PILLOW	7100	1/01/00	---	4.3	6.9	4.9
BLEWETT PASS#2PILLOW	4270	1/01/00	17	4.4	9.2	8.3
BRENDA MINE CAN.	4450	1/01/00	---	14.8	7.3	5.9
BUMPING LAKE (NEW)	3400	1/01/00	---	7.5E	11.6	7.5
BUMPING RIDGE PILLOW	4600	1/01/00	---	10.5	21.5	9.6
BUNCHGRASS MDWPILLOW	5000	1/01/00	---	13.5	19.2	10.9
CAYUSE PASS	5300	1/01/00	---	33.0E	48.6	32.4
CHESSMAN RESERVOIR	6200	12/29/99	4	.6	2.2	1.5
CHIWAUKUM G.S.	2500	12/30/99	10	3.0	7.2	4.8
COMBINATION PILLOW	5600	1/01/00	---	1.4	2.7	2.3
COPPER BOTTOM PILLOW	5200	1/01/00	---	4.6	8.5	4.7
CORRAL PASS PILLOW	6000	1/01/00	---	14.9	21.3	13.5
COUGAR MTN. PILLOW	3200	1/01/00	---	3.5	6.9	8.3
COYOTE HILL	4200	12/28/99	16	3.6	4.4	4.1
DALY CREEK PILLOW	5780	1/01/00	---	4.0	6.8	5.3
DISCOVERY BASIN	7050	12/29/99	16	3.4	4.6	4.4
DIX HILL	6400	1/02/00	20	4.9	4.5	5.0
DOMMERIE FLATS	2200	1/01/00	---	3.6E	7.1	3.9
EAST RAGGED SADDLE	3740	1/02/00	40	11.7	10.1	9.9
ELBOW LAKE PILLOW	3200	1/01/00	56	18.9	20.4	14.1
EMERY CREEK PILLOW	4350	1/01/00	---	6.1	8.0	7.2
ENDERBY CAN.	5800	1/01/00	81	20.7	16.5	18.7
FARRON CAN.	4000	12/30/99	22	6.1	6.8	7.0
FISH LAKE PILLOW	3370	1/01/00	---	14.5	24.7	12.4
FLATTOP MTN PILLOW	6300	1/01/00	---	15.3	29.3	21.0
FOURTH OF JULY SUM	3200	12/30/99	15	3.9	3.8	3.4
FROHNER MDWS PILLOW	6480	1/01/00	---	2.7	4.0	3.4
GRASS MOUNTAIN #2	2900	1/01/00	---	4.0E	.0	4.8
GRAVE CRK PILLOW	4300	1/01/00	---	6.1	7.4	7.7
GREEN LAKE PILLOW	6000	1/01/00	25	6.9	15.6	9.0
GROUSE CAMP PILLOW	5380	1/01/00	---	7.2	15.7	8.9
HAND CREEK PILLOW	5030	1/01/00	---	4.2	6.2	5.5
HARTS PASS PILLOW	6500	1/01/00	---	18.5	29.0	17.9
HELL ROARING DIVIDE	5770	12/27/99	44	11.3	14.8	13.0
HIGH RIDGE PILLOW	4980	1/01/00	---	7.4	13.9	9.7
HOLBROOK	4530	1/01/00	---	3.3E	4.4	4.0
HOODOO BASIN PILLOW	6050	1/01/00	---	15.5	26.9	19.0
HUMBOLDT GLCH PILLOW	4250	1/01/00	---	6.5	8.4	5.6
ISINTOK LAKE CAN.	5100	12/30/99	11	2.5	4.3	3.3
JUNE LAKE PILLOW	3200	1/01/00	---	17.4	18.8	11.5
KRAFT CREEK PILLOW	4750	1/01/00	---	7.4	6.1	6.6
LESTER CREEK	3100	1/01/00	---	7.2E	8.8	8.0
LOLO PASS PILLOW	5240	1/01/00	46	12.1	20.7	12.6
LONE PINE PILLOW	3800	1/01/00	---	16.4	23.1	12.0
LOOKOUT PILLOW	5140	1/01/00	---	12.7	18.3	13.5
LOST HORSE PILLOW	5000	1/01/00	---	5.2	15.0	15.3
LOST LAKE PILLOW	6110	1/01/00	---	23.0	31.7	25.8
LUBRECHT FOREST NO 3	5450	1/02/00	14	3.0	3.3	2.6
LUBRECHT FOREST NO 4	4650	1/02/00	6	1.0	1.0	1.4
LUBRECHT FOREST NO 6	4040	1/02/00	8	1.2	1.2	1.6
LUBRECHT HYDROPLOT	4200	1/02/00	14	2.0	3.1	2.8
LUBRECHT PILLOW	4680	1/01/00	---	2.4	2.8	2.4
LYMAN LAKE PILLOW	5900	1/01/00	---	22.3	40.4	25.4
LYNN LAKE	4000	1/01/00	---	6.5E	6.3	7.6
MARIAS PASS	5250	12/30/99	20	5.4	10.7	6.7
MEADOWS PASS PILLOW	3240	1/01/00	---	7.3	12.6	9.5
MERRITT	2140	12/30/99	6	1.9	9.5	7.1
MICA CREEK PILLOW	4750	1/01/00	---	12.1	13.9	--
MOOSE CREEK PILLOW	6200	1/01/00	---	8.5	9.7	7.1
MORRISSEY RIDGE CAN.	6100	1/01/00	---	8.3	17.7	15.4
MORSE LAKE PILLOW	5400	1/01/00	---	19.6	38.5	19.1
MOSES MTN PILLOW	4800	1/01/00	---	6.6	14.4	6.5
MOSQUITO RDG PILLOW	5200	1/01/00	---	17.6	23.8	15.7
MOUNT CRAG PILLOW	4050	1/01/00	---	9.2	21.1	11.3
MT. KOBAU CAN.	5500	12/28/99	17	4.4	7.8	6.2
MOUNT GARDNER PILLOW	2860	1/01/00	---	5.5	10.1	5.8
N.F. ELK CR PILLOW	6250	1/01/00	---	4.9	6.8	4.6
NEZ PERCE CMP PILLOW	5650	1/01/00	---	6.3	7.8	5.7
NOISY BASIN PILLOW	6040	1/01/00	---	16.1	16.7	17.2
OLALLIE MDWS PILLOW	3960	1/01/00	---	19.0	33.4	20.3
OPHIR PARK	7150	1/02/00	24	6.0	6.9	7.0
PARADISE PARK PILLOW	5500	1/01/00	---	33.3	40.7	23.6
PARK CK RIDGE PILLOW	4600	1/01/00	61	18.4	31.0	18.4
PETERSON MDW PILLOW	7200	1/01/00	---	2.8	4.6	4.2
PIGTAIL PEAK PILLOW	5900	1/01/00	64	21.6	36.0	20.1
PIKE CREEK PILLOW	5930	1/01/00	---	8.6	16.8	11.4
PIPESTONE PASS	7200	12/28/99	5	1.2	3.6	2.1
POPE RIDGE PILLOW	3540	1/01/00	25	6.4	27.1	9.1
POTATO HILL PILLOW	4500	1/01/00	---	7.2	17.3	10.5
QUARTZ PEAK PILLOW	4700	1/01/00	---	12.6	13.5	8.5
RAINY PASS PILLOW	4780	1/01/00	---	15.6	28.0	15.4
REX RIVER PILLOW	1900	1/01/00	37	13.9	13.9	10.5
ROCKER PEAK PILLOW	8000	1/01/00	---	4.1	6.7	6.4
SF THUNDER CK AM	2200	1/01/00	---	3.6E	5.3	4.5
SADDLE MTN PILLOW	7900	1/01/00	---	8.5	14.7	11.1
SALMON MDWS PILLOW	4500	1/01/00	---	2.7	6.7	3.9
SASSE RIDGE PILLOW	4200	1/01/00	---	11.0	23.0	12.4
SAVAGE PASS PILLOW	6170	1/01/00	---	10.2	17.6	11.0
SAWMILL RIDGE	4700	1/01/00	---	11.5E	14.0	13.3
SCHREIBERS MDW AM	3400	1/01/00	---	25.2E	32.4	21.9
SHEEP CANYON PILLOW	4050	1/01/00	---	6.9	31.2	15.2
SKALKAHO PILLOW	7260	1/01/00	---	8.6	14.9	9.8
SKOOKUM CREEK PILLOW	3920	1/01/00	---	13.9	9.7	12.0
SPENCER MDW PILLOW	3400	1/01/00	---	12.4	16.3	9.4
SPIRIT LAKE PILLOW	3100	1/01/00	---	.5	.0	1.8
SPOTTED BEAR MTN.	7000	1/01/00	---	5.6E	7.0	6.6
STAHL PEAK PILLOW	6030	1/01/00	---	13.7	18.6	16.0
STAMPEDE PASS PILLOW	3860	1/01/00	---	18.1	20.7	16.7
STEMPLE PASS	6600	12/30/99	19	4.6	--	--
STEVENS PASS PILLOW	4070	1/01/00	---	14.0	22.4	15.3
STEVENS PASS SAND SD	3700	12/30/99	40	12.7	21.8	14.6
STORM LAKE	7780	12/29/99	18	3.8	6.6	5.4
STUART MOUNTAIN	7400	1/01/00	---	14.0E	19.1	13.4
SUMMERLAND RES CAN.	4200	12/29/99	8	1.7	4.8	4.4
SUNSET PILLOW	5540	1/01/00	---	9.6	11.7	13.5
SURPRISE LKS PILLOW	4250	1/01/00	---	19.8	23.1	20.2
TEN MILE LOWER	6600	12/29/99	10	2.3	3.5	3.0
TEN MILE MIDDLE	6800	12/29/99	14	3.0	5.0	4.7
TINKHAM CREEK PILLOW	3000	1/01/00	---	8.0	16.5	7.6
TOUCHET #2 PILLOW	5530	1/01/00	---	9.7	22.2	12.9
TRINKUS LAKE	6100	1/01/00	---	16.5E	18.6	18.7
TROUGH #2 PILLOW	5310	1/01/00	---	3.7	7.5	4.9
TRUMAN CREEK	4060	12/30/99	5	1.0	2.3	2.0
TUNNEL AVENUE	2450	1/01/00	---	7.6E	17.8	8.1
TV MOUNTAIN	6800	1/03/00	29	6.4	10.3	7.2
TWELVEMILE PILLOW	5600	1/01/00	---	7.8	10.7	7.2
TWIN LAKES PILLOW	6400	1/01/00	---	17.3	25.4	16.3
TWIN SPIRIT DIVIDE	3480	1/02/00	23	6.1	6.4	6.8
UPPER HOLLAND LAKE	6200	1/01/00	---	14.6E	15.0	15.8
UPPER WHEELER PILLOW	4400	1/01/00	---	3.4	8.1	5.9
WARM SPRINGS PILLOW	7800	1/01/00	---	8.2	11.2	9.4
WEASEL DIVIDE	5450	12/29/99	40	11.9	18.6	15.3
WELLS CREEK PILLOW	4200	1/01/00	47	12.6	19.1	15.2
WHITE PASS ES PILLOW	4500	1/01/00	---	5.4	11.3	9.8

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Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

Washington:
http://www.wa.nrcs.usda.gov/nrcs/CoopSnoSrvy.htm

Oregon:
http://crystal.or.nrcs.usda.gov/snowsurveys

Idaho:
http://idsnow.id.nrcs.usda.gov

National Water and Climate Center (NWCC):
http://www.wcc.nrcs.usda.gov

NWCC Anonymous FTP Server:
ftp.wcc.nrcs.usda.gov

USDA-NRCS Agency Homepages

Washington:
http://www.wa.nrcs.usda.gov/nrcs

NRCS National:
http://www.ftw.nrcs.usda.gov

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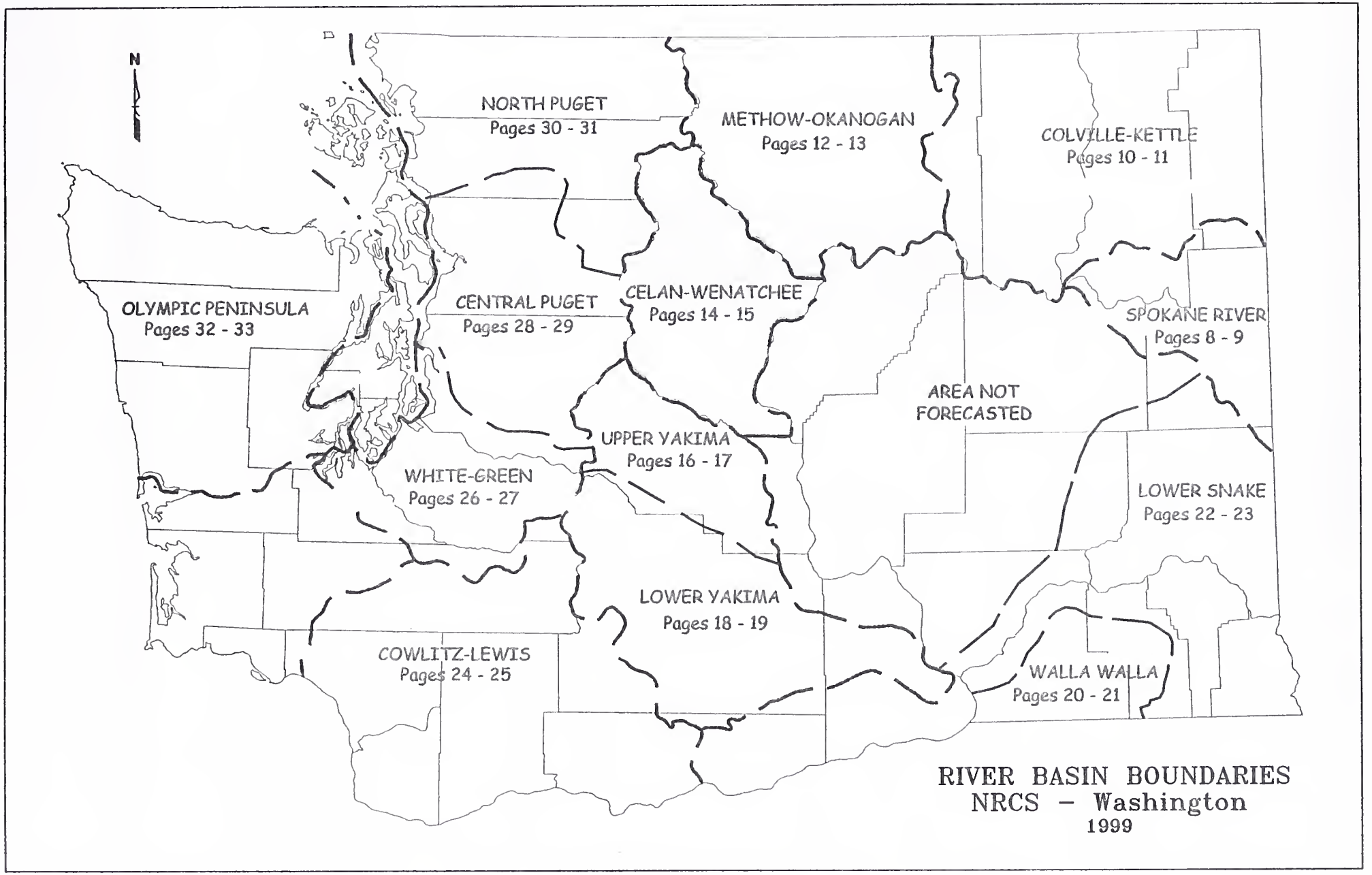
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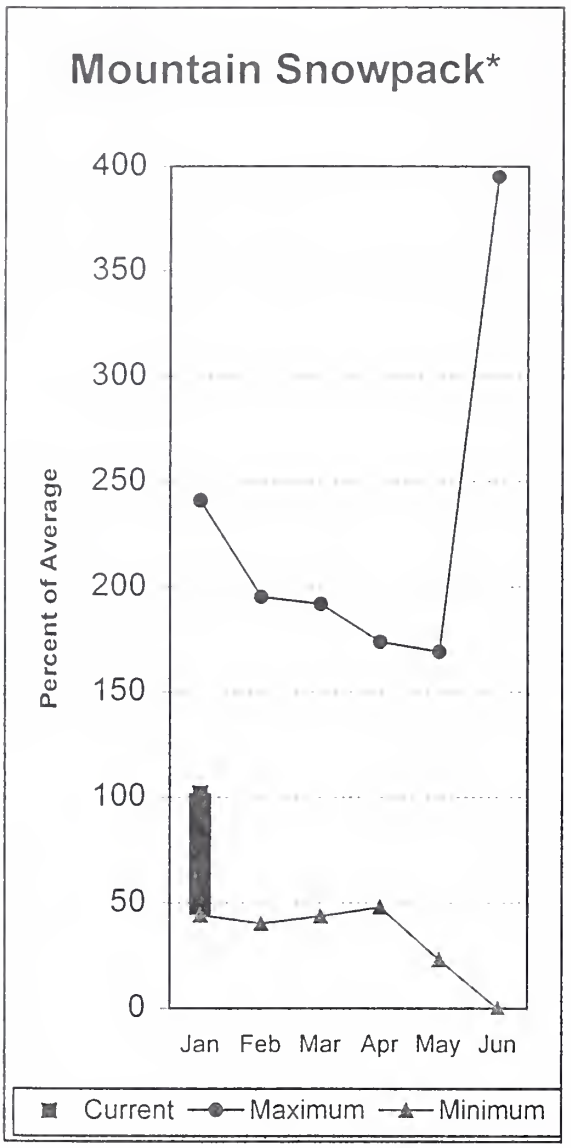
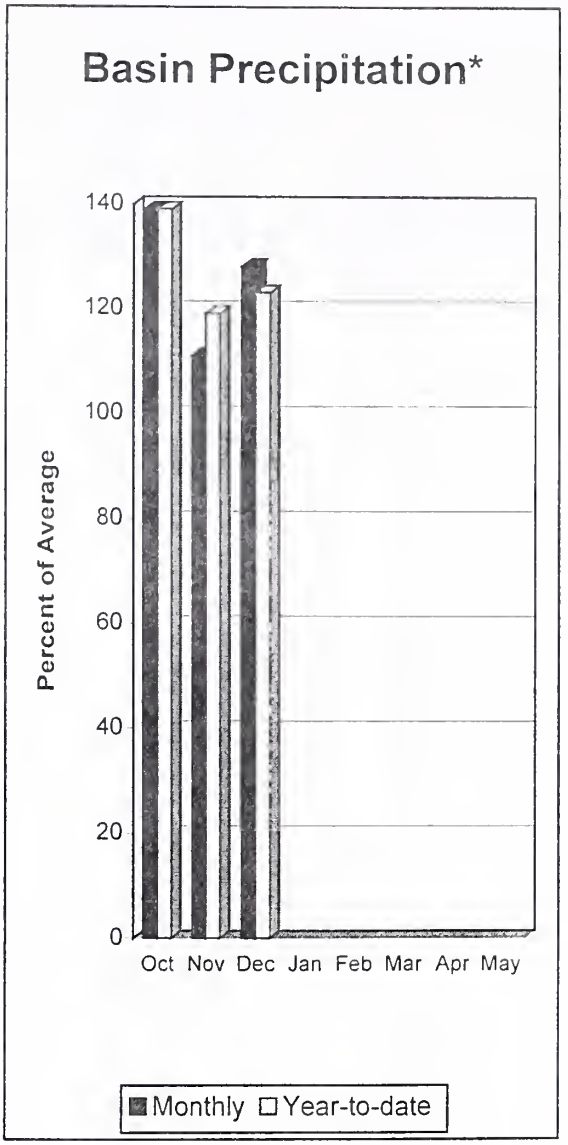
Spokane River Basin





*Based on selected stations

The January 1 forecasts for summer runoff within the Spokane River Basin are 107% of average near Post Falls and at Long Lake. The forecast is based on a basin snowpack that is 102% of average and precipitation that is 123% of average for the water year. Precipitation for December was above normal at 128% of average. Streamflow on the Spokane River at Long Lake, was 135% of average for December. January 1 storage in Coeur d'Alene Lake, was 111,500-acre feet, 85% of average and 47% of capacity. Snowpack at Quartz Peak SNOTEL site contained 12.6 inches of water, compared to the average January 1 reading of 8.5 inches. Average temperatures in the Spokane basin were 4 degrees above normal.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2000

SPOKANE near Post Falls (2)	APR-SEP	2117	2595	2920	107	3245	3723	2730
	APR-JUL	2055	2522	2840	108	3158	3625	2633
SPOKANE at Long Lake	APR-JUL	2354	2840	3170	108	3500	3986	2936
	APR-SEP	2533	3037	3380	107	3723	4227	3159

SPOKANE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
COEUR D'ALENE	238.5	111.5	114.5	130.5

SPOKANE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SPOKANE RIVER	10	86	102
NEWMAN LAKE	1	93	148

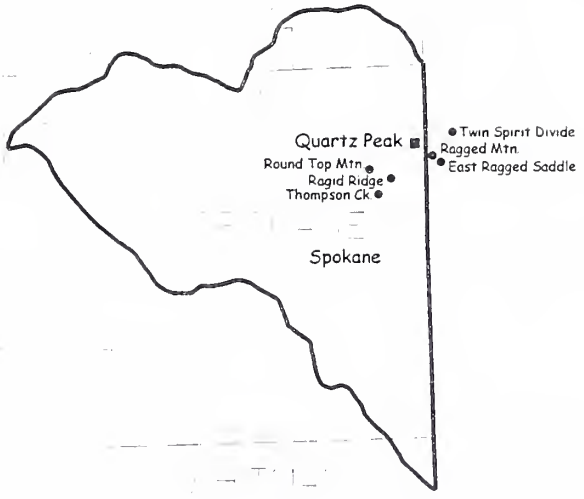
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

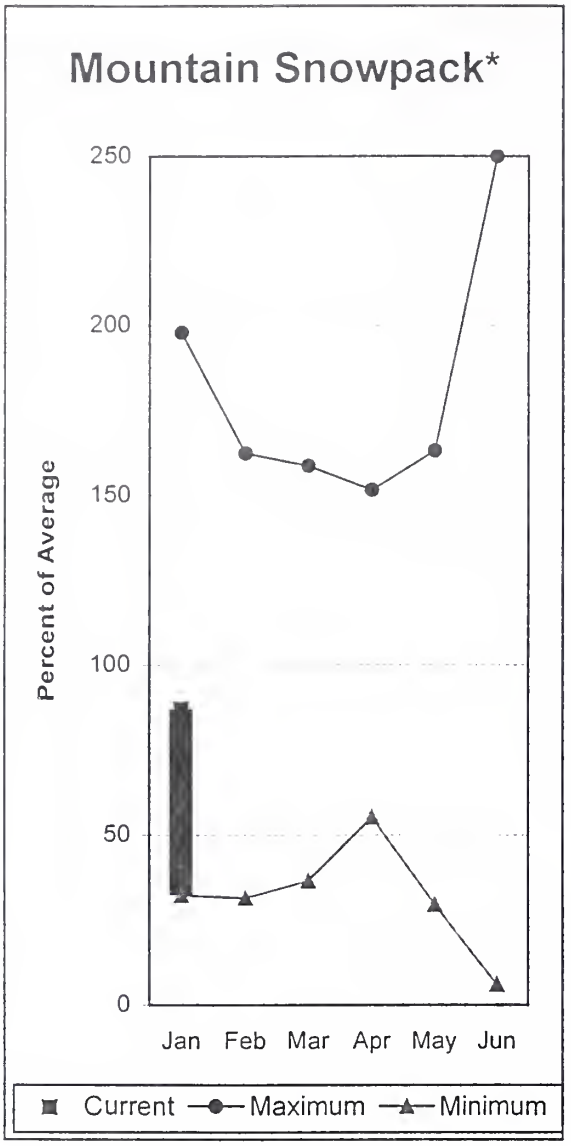
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

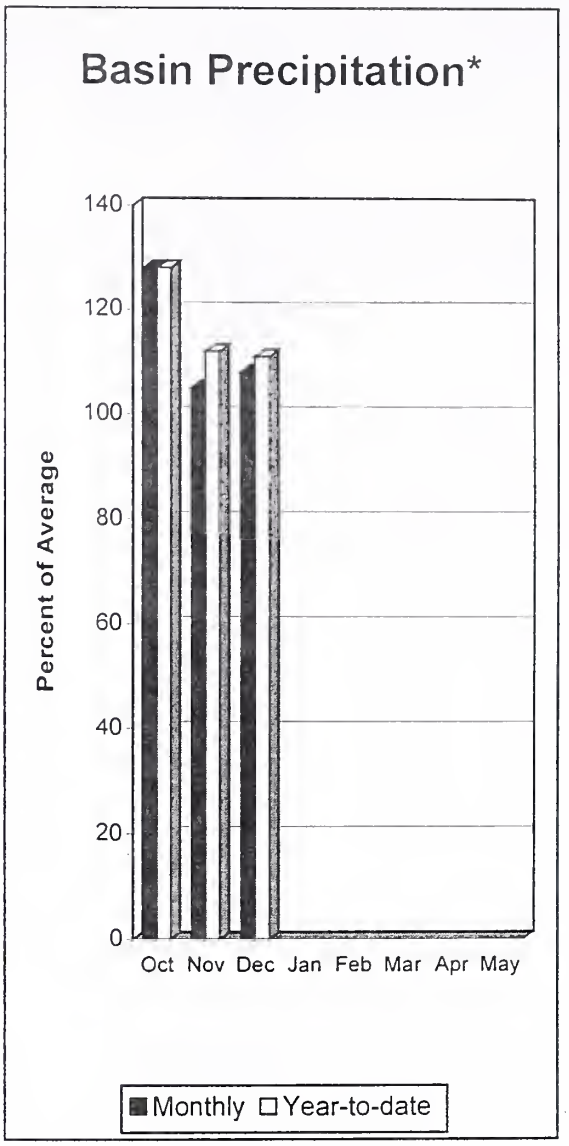
SPOKANE RIVER BASIN
Percent of Average
January 1, 2000

Snowpack - 102%
Precipitation - 128%
Reservoir - 85%



Colville - Pend Oreille River Basins





*Based on selected stations

The April – September average forecast for the Kettle River streamflow is 102%, Colville at Kettle Falls is 105%, and Priest River near the town of Priest River is 104%. December streamflow was 115% of average on the Pend Oreille River, 159% on the Columbia at the International Boundary and 257% on the Kettle River. January 1 snow cover was 87% of average in the Pend Oreille Basin and 87% in the Kettle River Basin. Precipitation during December was 108% of average, bringing the year-to-date precipitation to 111% of average. Reservoir storage in Roosevelt and Banks lakes was reported to be 87% of average and 76% of capacity on January 1. Average temperatures were 4 degrees above normal.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
PEND OREILLE Lake Inflow (1,2)	APR-JUL	6617	10319	12000	91	13681	17383	13150
	APR-SEP	7213	11261	13100	91	14939	18987	14370
	APR-JUN	5319	8813	10400	91	11987	15481	11390
PRIEST near Priest River (1,2)	APR-JUL	639	781	845	104	909	1051	812
	APR-SEP	679	827	895	104	963	1111	865
PEND OREILLE bl Box Canyon (1,2)	APR-JUL	7643	10846	12300	92	13754	16957	13380
	APR-SEP	8317	11813	13400	92	14987	18483	14590
	APR-JUN	6643	9399	10650	92	11901	14657	11570
CHAMOKANE CREEK near Long Lake	MAY-AUG	3.25	6.31	8.40	99	10.49	13.55	8.52
COLVILLE at Kettle Falls	APR-SEP	84	116	137	105	158	190	131
	APR-JUL	75	105	125	104	145	175	120
	APR-JUN	70	97	115	104	133	160	111
KETTLE near Laurier	APR-SEP	1489	1728	1890	102	2052	2291	1854
	APR-JUL	1447	1671	1824	104	1977	2201	1761
	APR-JUN	1280	1486	1625	103	1764	1970	1585
COLUMBIA at Birchbank (1,2)	APR-JUL	30307	36010	38600	110	41190	46893	35140
	APR-SEP	37713	44856	48100	110	51344	58487	43810
	APR-JUN	22348	26475	28350	110	30225	34352	25670
COLUMBIA at Grand Coulee Dm (1,2)	APR-SEP	50145	62630	68300	105	73970	86455	64850
	APR-JUL	42176	52645	57400	105	62155	72624	54543
	APR-JUN	33040	41196	44900	105	48604	56760	42756

COLVILLE - PEND OREILLE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
ROOSEVELT	5232.0	3814.0	4251.0	4547.9
BANKS	715.0	684.5	687.1	618.3

COLVILLE - PEND OREILLE RIVER BASINS
Watersned Snowpack Analysis - January 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
COLVILLE RIVER	0	0	0
PEND OREILLE RIVER	59	68	87
KETTLE RIVER	1	90	87

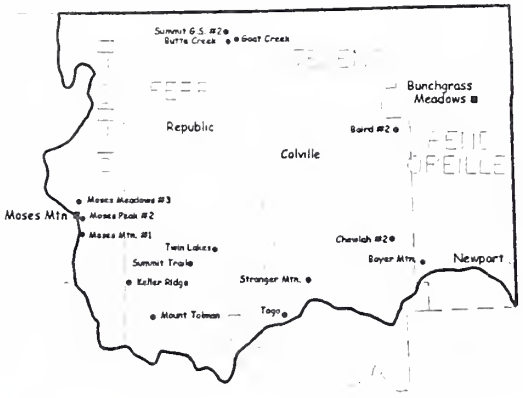
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

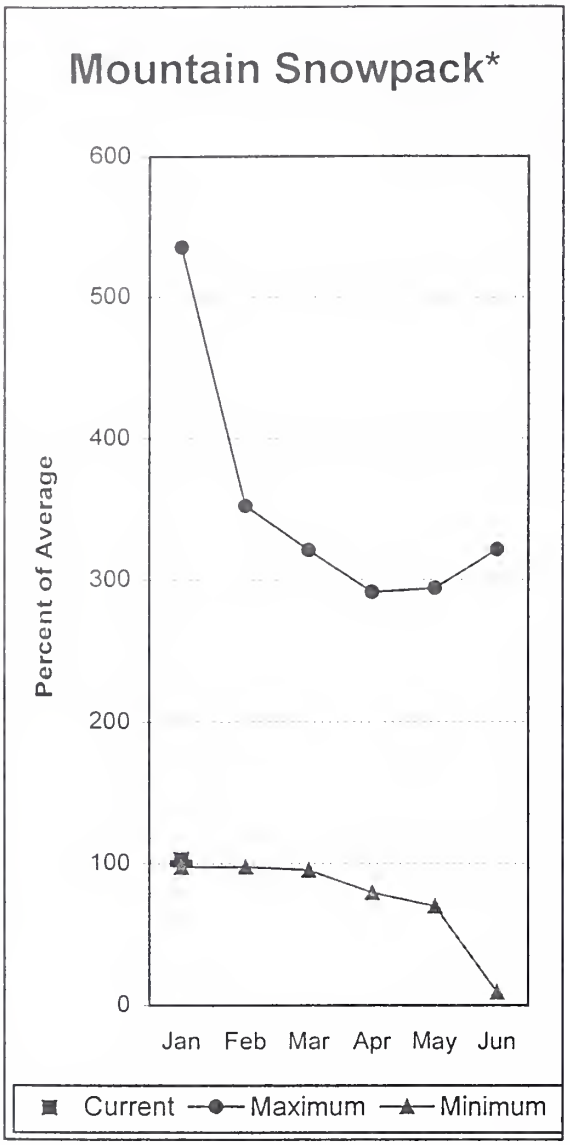
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

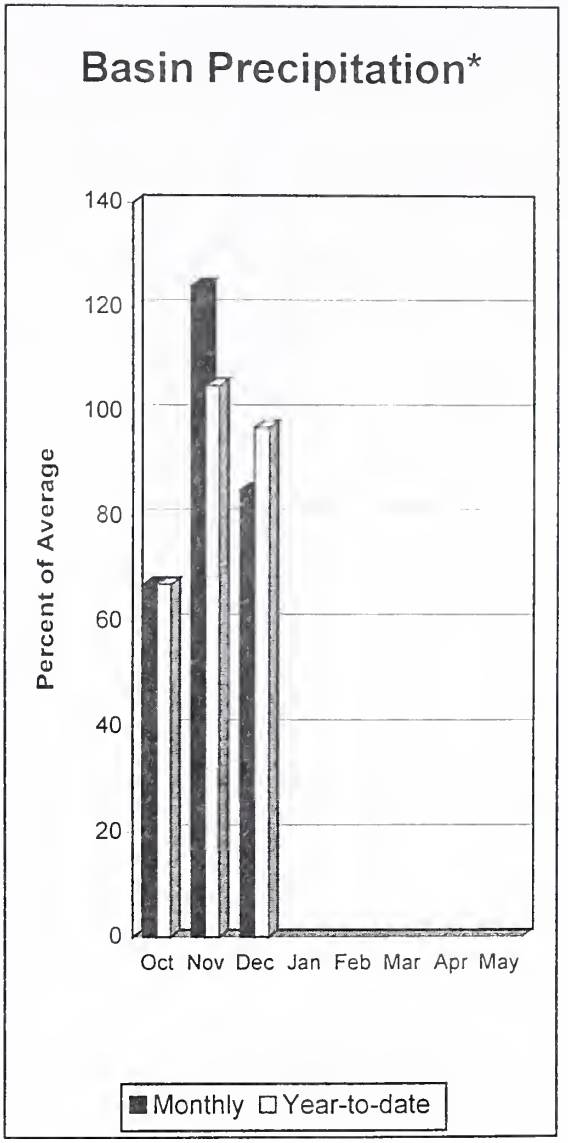
COLVILLE-KETTLE BASIN
Percent of Average
January 1, 2000

Snowpack - 87%
Precipitation - 108%
Reservoir - 87%



Okanogan - Methow River Basins





*Based on selected stations

Summer runoff average forecast for the Okanogan River is 96%, Similkameen River is 97%, Methow River is 107% and Salmon Creek is 80%. January 1 snow cover on the Okanogan was 103% of average and Methow was 99%. Moses Mountain SNOTEL site had a January 1 reading of 102% of average. December precipitation in the Okanogan-Methow was 85% of average, with precipitation for the water year at 97% of average. December streamflow for the Methow River was 200% of average, 183% for the Okanogan River and 162% for the Similkameen. Snow-water -content at the Salmon Meadows SNOTEL, near Conconully, was 2.7 inches. Average for this site is 3.9 inches on January 1. Combined storage in the Conconully Reservoirs was 17,300-acre feet, which is 74% of capacity and 129% of the January 1 average. Temperatures were 5-6 degrees above normal for the past month.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SIMILKAMEEN near Nighthawk (1)	APR-JUL	590	1044	1250	96	1456	1910	1304
	APR-SEP	649	1131	1350	97	1569	2051	1399
	APR-JUN	549	907	1070	96	1233	1591	1113
OKANOGAN near Tonasket (1)	APR-JUL	623	1175	1425	97	1675	2227	1466
	APR-SEP	673	1276	1550	96	1824	2427	1623
	APR-JUN	552	998	1200	97	1402	1848	1233
SALMON CREEK near Conconully	APR-JUL	0.3	9.4	15.5	81	22	31	19.1
	APR-SEP	0.3	9.7	16.0	80	22	32	20
METHOW RIVER near Pateros	APR-SEP	701	885	1010	107	1135	1319	942
	APR-JUL	653	821	935	107	1049	1217	873
	APR-JUN	559	702	800	107	898	1041	746

OKANOGAN - METHOW RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
SALMON LAKE		NO REPORT		
CONCONULLY RESERVOIR		NO REPORT		

OKANOGAN - METHOW RIVER BASINS
Watershed Snowpack Analysis - January 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
OKANOGAN RIVER	7	85	108
OMAK CREEK	1	46	102
SANPOIL RIVER	0	0	0
SIMILKAMEEN RIVER	0	0	0
TOATS COULEE CREEK	0	0	0
CONCONULLY LAKE	1	40	69
METHOW RIVER	3	58	99

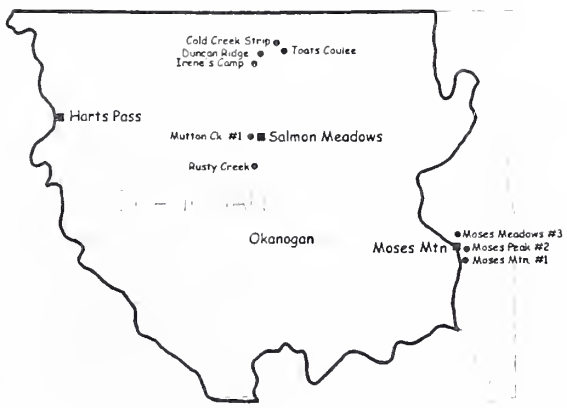
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

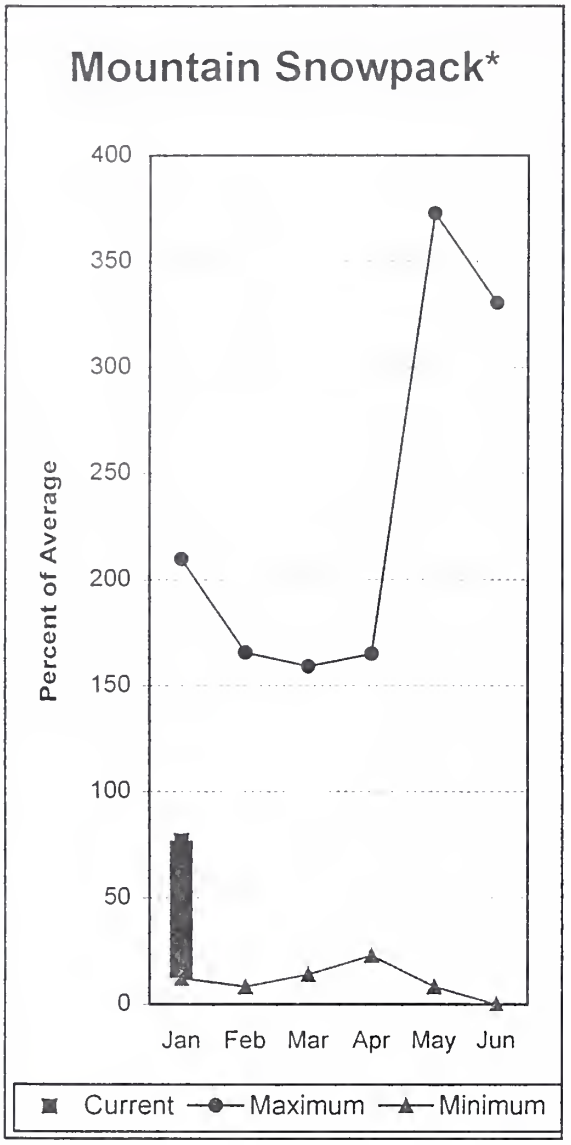
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

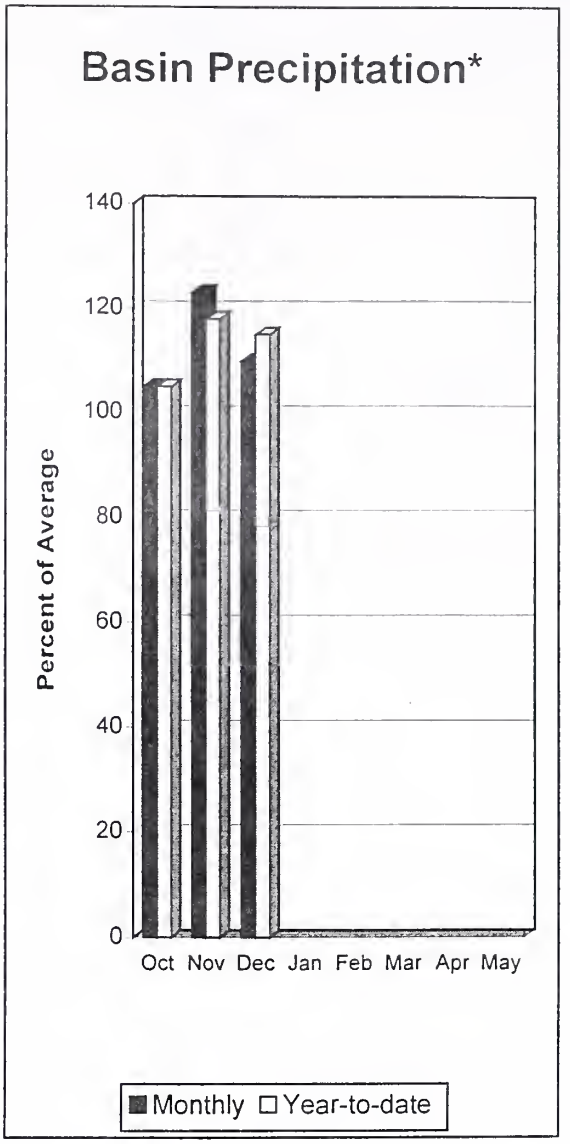
OKANOGAN-METHOW BASIN
Percent of Average
January 1, 2000

Snowpack - 127%
Precipitation - 126%
Reservoir - 127%



Wenatchee - Chelan River Basins





*Based on selected stations

Precipitation during December was 110% of average in the basin and 115% for the year-to-date. Runoff for Entiat River is forecast to be 107% of average for the summer. The April-September average forecast for Chelan River is 103%, Wenatchee River at Plain is 128% and Stehekin is 127%. Icicle, Stemilt and Squilchuck creeks are all expected to have near normal flows this summer. December average streamflows on the Chelan River were 275% and on the Wenatchee River 166%. January 1 average snowpack in Wenatchee Basin was 81%, in Chelan Basin was 98%, Colockum Ridge was 76%; and Stemilt Creek was 58%. Snowpack in the Entiat River Basin was 70% of average. Reservoir storage in Lake Chelan was 517,800 acre feet, 137% of January 1 average and 77% of capacity. Miners Ridge SNOTEL had the most snow water with 26.9 inches of water. This site would normally have 25.6 inches on January 1. Temperatures were about 5 degrees above normal for December.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
CHELAN RIVER near Chelan	APR-SEP	1049	1139	1200	103	1261	1351	1160
	APR-JUL	935	1007	1055	103	1103	1175	1024
	APR-JUN	758	805	836	103	867	914	812
STEHEKIN near STEHEKIN	APR-SEP	728	795	840	102	885	952	827
	APR-JUL	642	685	715	102	745	788	701
	APR-JUN	518	537	550	102	563	582	538
ENTIAT RIVER near Ardenvoir	APR-SEP	171	214	243	107	272	315	227
	APR-JUL	154	193	220	107	247	286	206
	APR-JUN	129	159	180	107	201	231	169
WENATCHEE at Plain	APR-SEP	908	1082	1200	101	1318	1492	1190
	APR-JUL	833	974	1070	100	1166	1307	1072
	APR-JUN	708	811	880	102	949	1052	864
WENATCHEE R. at Peshastin	APR-SEP	1070	1427	1670	102	1913	2270	1636
	APR-JUL	979	1301	1520	102	1739	2061	1485
	APR-JUN	795	1054	1230	102	1406	1665	1204
STEMILT nr Wenatchee (miners in)	MAY-SEP	84	113	133	96	153	182	138
ICICLE CREEK near Leavenworth	APR-SEP	301	339	365	106	391	429	344
	APR-JUL	278	314	338	106	362	398	318
	APR-JUN	228	258	279	106	300	330	263

WENATCHEE - CHELAN RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
CHELAN LAKE	676.1	517.8	393.2	378.7

WENATCHEE - CHELAN RIVER BASINS
Watershed Snowpack Analysis - January 1, 2000

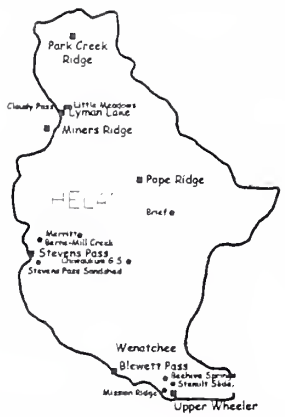
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
CHELAN LAKE BASIN	4	63	98
ENTIAT RIVER	1	24	70
WENATCHEE RIVER	10	53	81
SQUILCHUCK CREEK	0	0	0
STEMILT CREEK	1	42	58
COLOCKUM CREEK	1	49	76

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

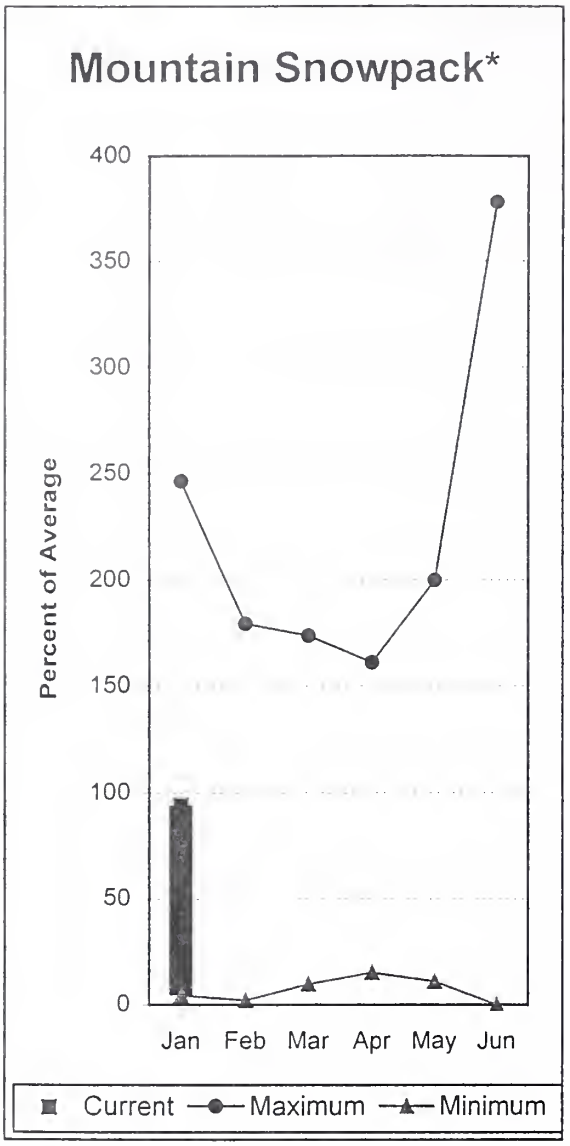
The average is computed for the 1961-1990 base period.

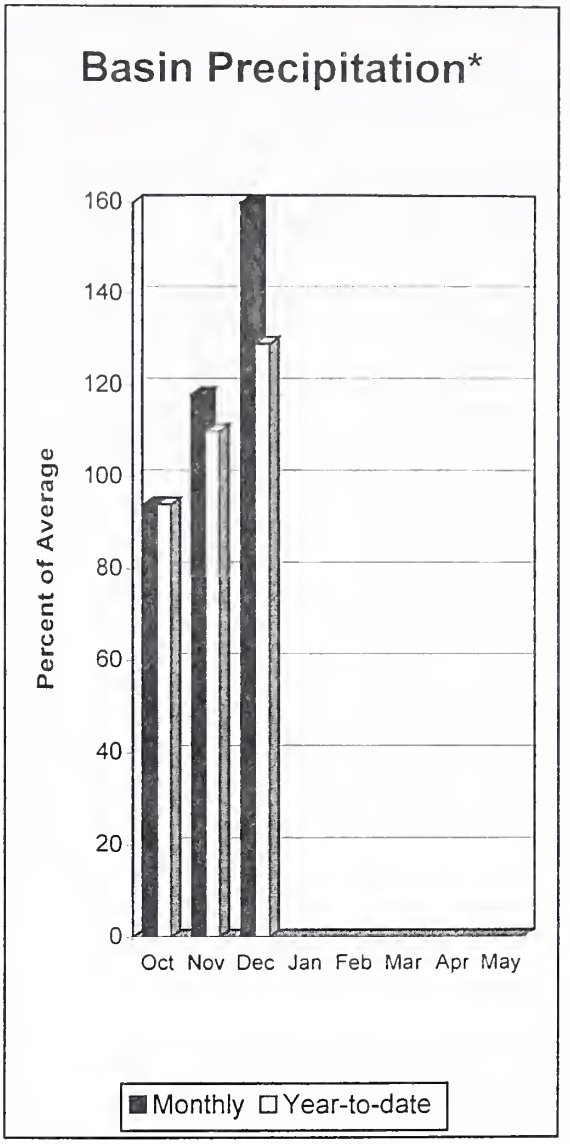
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WENATCHEE-CHELAN BASIN
Percent of Average
January 1, 2000
Snowpack - 77%
Precipitation - 110%
Reservoir - 137%



Upper Yakima River Basin





*Based on selected stations

January 1 reservoir storage for the Upper Yakima reservoirs was 588,400-acre feet, 125% of average. Forecasts for the Yakima River at Cle Elum are 105% of average. Lake inflows are all expected to be above average this summer. December streamflows within the basin were Yakima near Cle Elum at 177% and Cle Elum River near Roslyn at 155%. January 1 snowpack was 94% based upon 8 snow courses and SNOTEL readings within the Upper Yakima Basin. Precipitation was 160% of average for December and 129% year-to-date for water. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KEECHELUS LAKE INFLOW	APR-JUL	96	118	133	107	148	170	124
	APR-SEP	104	128	144	107	160	184	135
	APR-JUN	88	105	117	107	129	146	109
KACHESS LAKE INFLOW	APR-JUL	83	105	119	107	133	155	111
	APR-SEP	88	111	126	107	141	164	118
	APR-JUN	78	95	106	107	117	134	99
CLE ELUM LAKE INFLOW	APR-JUL	321	383	425	104	467	529	409
	APR-SEP	353	423	470	105	517	587	448
	APR-JUN	282	329	360	104	391	438	345
YAKIMA at Cle Elum	APR-JUN	572	681	755	105	829	938	721
	APR-JUL	645	779	870	105	961	1095	832
	APR-SEP	718	862	960	105	1058	1202	915

UPPER YAKIMA RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
KEECHELUS	157.8	81.2	69.0	83.0
KACHESS	239.0	185.6	124.7	159.1
CLE ELUM	436.9	321.6	150.2	230.2

UPPER YAKIMA RIVER BASIN
Watershed Snowpack Analysis - January 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
UPPER YAKIMA RIVER	8	56	94

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

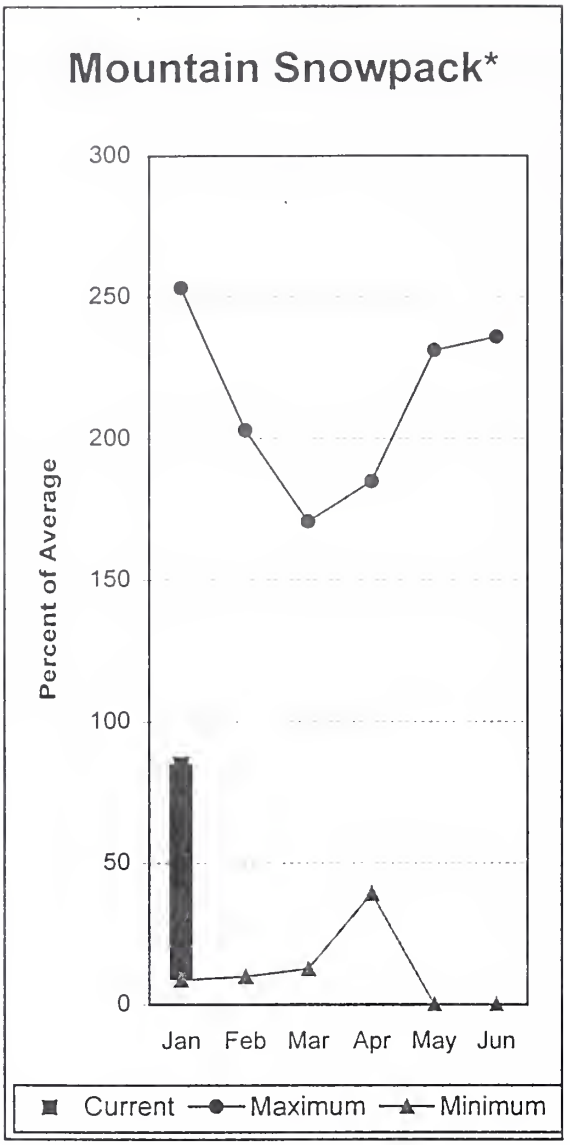
The average is computed for the 1961-1990 base period.

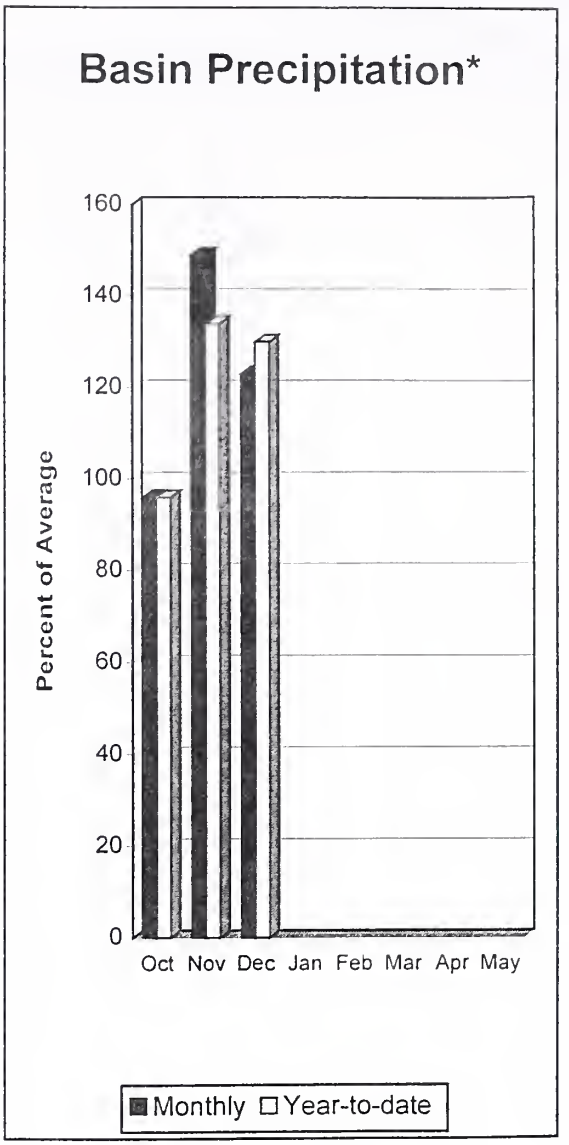
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

UPPER YAKIMA BASIN
Percent of Average
January 1, 2000

Snowpack - 94%
Precipitation - 160%
Reservoir - 125%

Lower Yakima River Basin





*Based on selected stations

December average streamflows within the basin were: Yakima River near Parker, 1756%; Naches River near Naches, 172%; and Yakima River at Kiona, 218%. January 1 reservoir storage for Bumping and Rimrock reservoirs was 149,200-acre feet, 138% of average. Forecast averages for Yakima River at Parker are102%; American River near Nile, 98%; Ahtanum Creek, 98%; and Klickitat River near Glenwood, 102%. January 1 snowpack was 97% based upon 8 snow courses and SNOTEL readings within the Lower Yakima Basin. Precipitation was 97% of average for December and 120% year-to-date for water. Temperatures for the month were 6 degrees above normal. Volume forecasts for Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BUMPING LAKE INFLOW	APR-SEP	100	124	140	103	156	180	136
	APR-JUL	91	112	126	102	140	161	124
	APR-JUN	79	95	106	102	117	133	104
AMERICAN RIVER near Nile	APR-SEP	84	102	115	98	128	146	118
	APR-JUL	78	95	107	98	119	136	109
	APR-JUN	66	80	90	98	100	114	92
RIMROCK LAKE INFLOW	APR-SEP	185	218	240	101	262	295	238
	APR-JUL	154	181	200	100	219	246	200
	APR-JUN	125	146	160	99	174	195	162
NACHES near Naches	APR-SEP	620	745	830	100	915	1040	832
	APR-JUL	559	676	755	100	834	951	755
	APR-JUN	485	583	650	100	717	815	651
AHTANUM CREEK nr Tampico (2)	APR-SEP	24	37	45	98	54	66	46
	APR-JUL	22	33	41	98	49	60	42
	APR-JUN	18.8	29	35	98	42	52	36
YAKIMA near Parker	APR-SEP	1536	1830	2030	102	2230	2524	1994
	APR-JUL	1376	1652	1840	102	2028	2304	1805
	APR-JUN	1234	1470	1630	102	1790	2026	1597
KLICKITAT near Glenwood	APR-JUN	76	98	112	102	126	148	110
	APR-SEP	98	125	143	102	161	188	140

LOWER YAKIMA RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BUMPING LAKE	33.7	15.6	21.4	6.3
RIMROCK	198.0	133.6	86.0	102.1

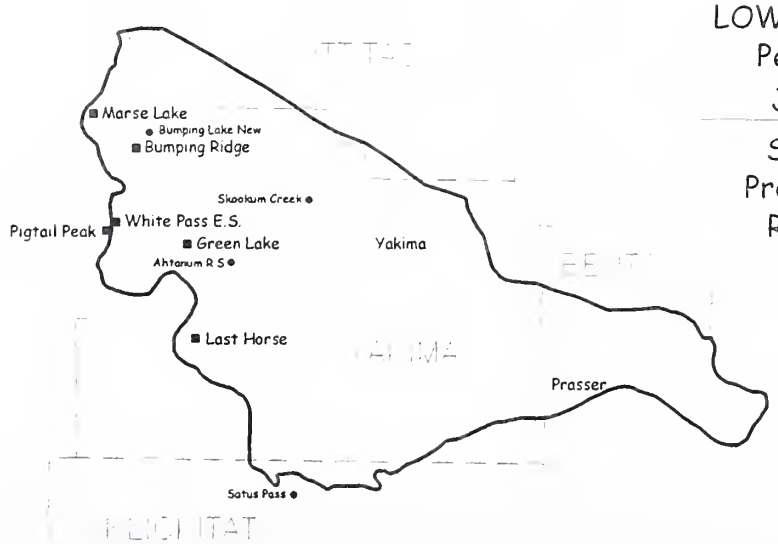
LOWER YAKIMA RIVER BASIN
Watershed Snowpack Analysis - January 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	Average

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

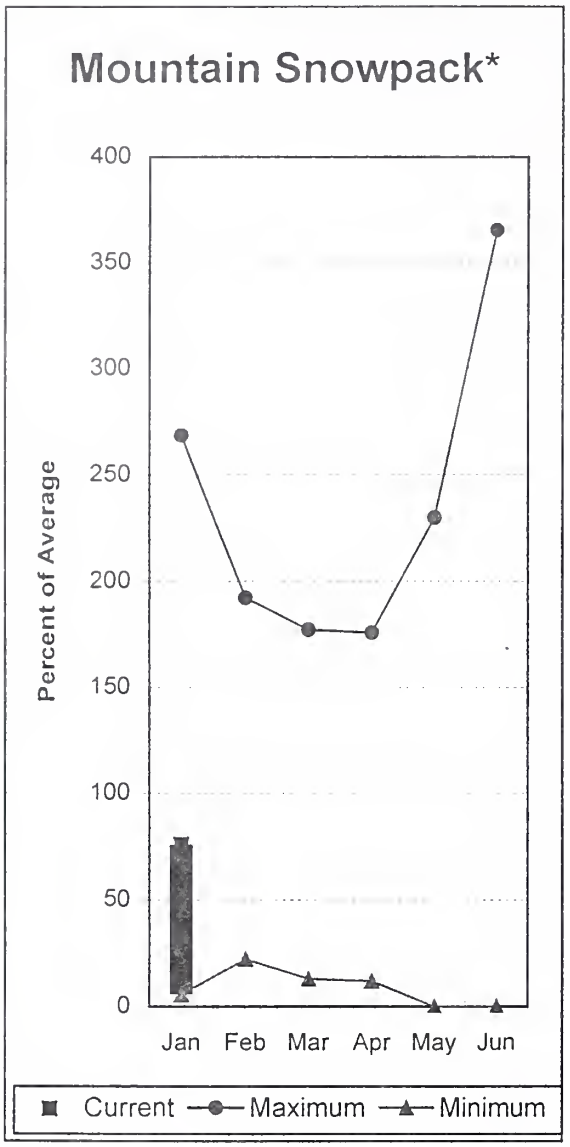
The average is computed for the 1961-1990 base period.

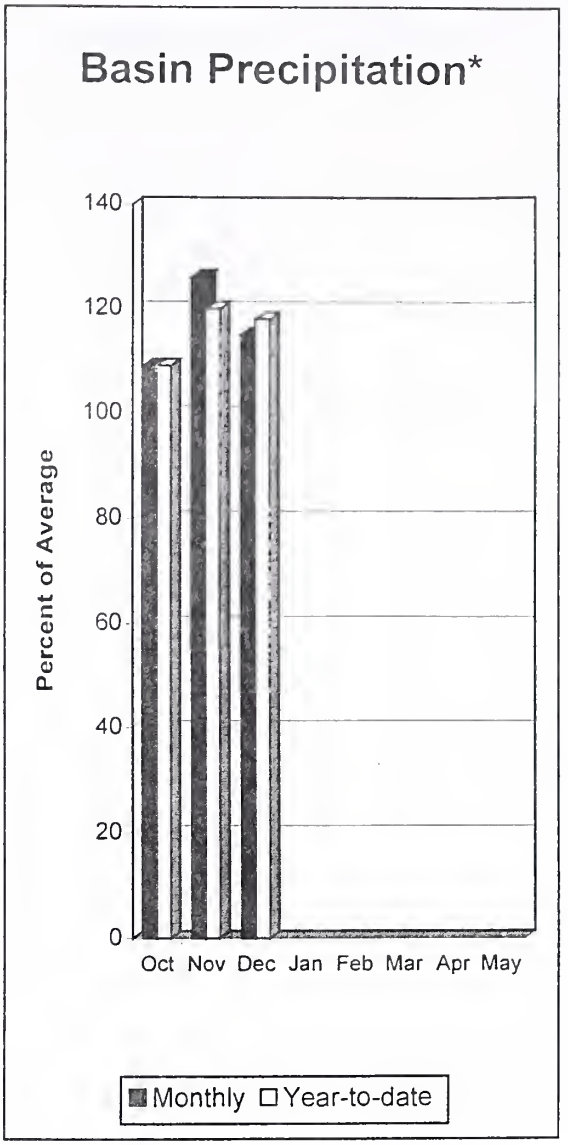
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.



LOWER YAKIMA BASIN
Percent of Average
January 1, 2000

Snowpack - 85%
Precipitation - 130%
Reservoir - 138%





*Based on selected stations

December precipitation was 123% of average, bringing the year-to-date precipitation to 130% of average. January 1 average snowpack was at 76%. The forecast for the coming summer is for 104% of average streamflow in the South Fork Walla Walla River and 100% for Mill Creek. December streamflow was 138% of average for the Walla Walla River. The Touchet SNOTEL site had 9.7 inches of snow-water-equivalent. The average January 1 reading for this site is 12.9 inches. Average temperatures were 4 degrees above normal for the area.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
MILL CREEK at Walla Walla	APR-SEP	7.3	13.1	17.1	100	21	27	17.1
	APR-JUL	7.1	12.9	16.9	100	21	27	16.9
	APR-JUN	7.0	12.8	16.7	100	21	26	16.7
SF WALLA WALLA near Milton-Freewater	APR-JUL	43	50	55	104	60	67	53
	APR-SEP	56	64	69	104	74	82	66

WALLA WALLA RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

WALLA WALLA RIVER BASIN
Watershed Snowpack Analysis - January 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
WALLA WALLA RIVER	2	47	76

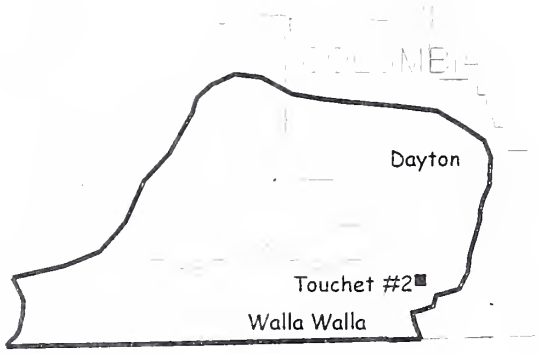
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

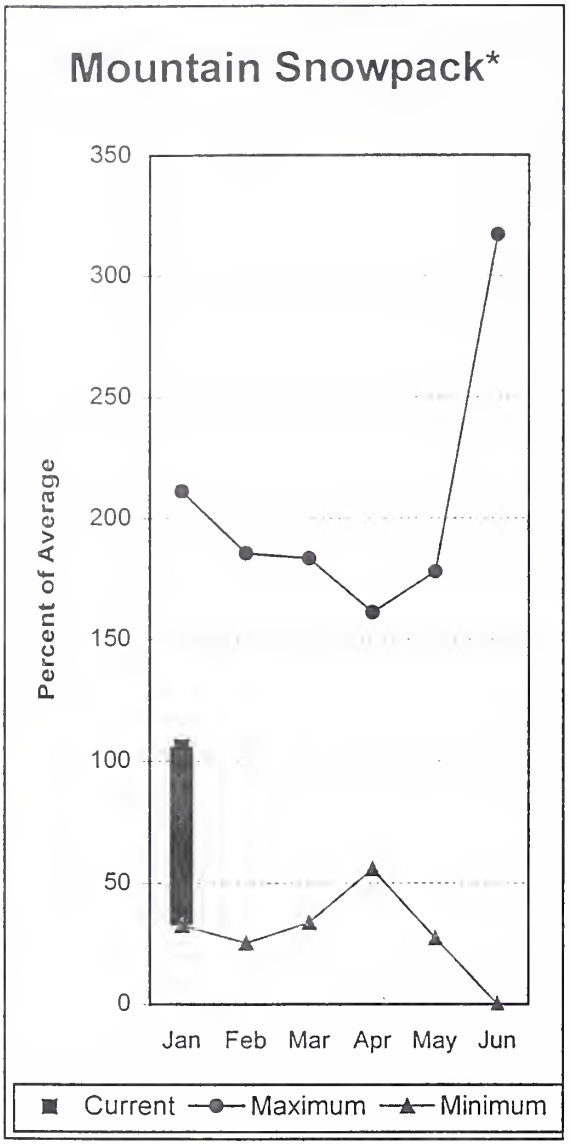
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

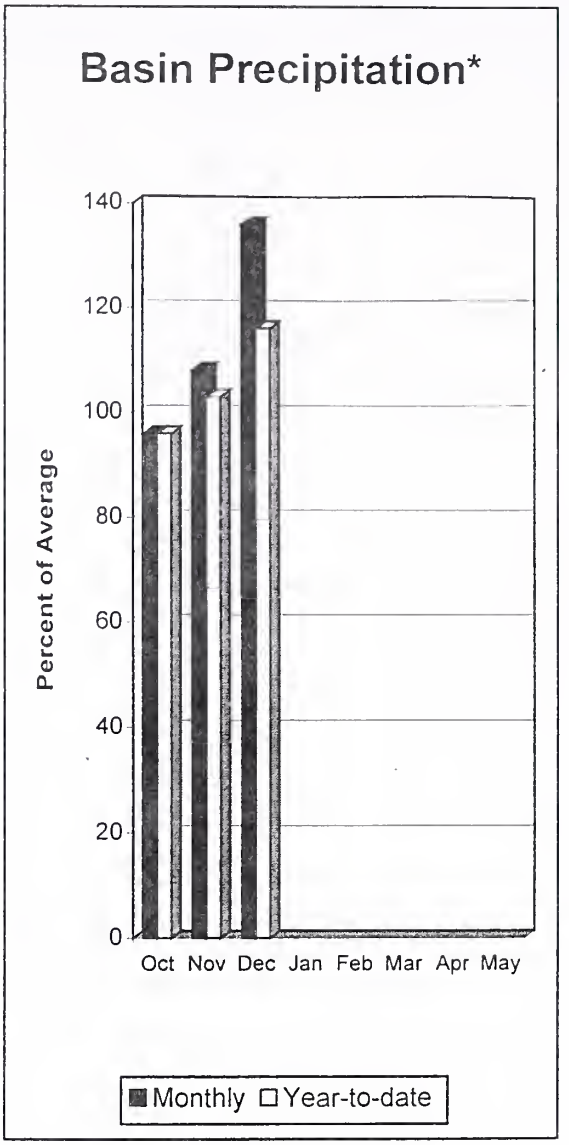
WALLA WALLA BASIN
Percent of Average
January 1, 2000

Snowpack - 76%
Precipitation - 115%



Lower Snake River Basin





*Based on selected stations

The April - September forecast is for 86% of average streamflow in the Snake River below Lower Granite Dam, 94% for Grande Ronde at Troy, and 102% for Clearwater River at Spalding. December precipitation was 136% of average, bringing the year-to-date precipitation to 116% of average. January 1 snowpack was at 106% of average. December streamflow was 95% of average for Snake River below Lower Granite Dam and 112% for Grande Ronde River near Troy. Average temperatures were 2 degrees above normal for the area.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
GRANDE RONDE at Troy (1)	MAR-JUL	637	1148	1380	94	1612	2123	1471
	APR-SEP	556	1020	1230	94	1440	1904	1312
CLEARWATER at Spalding (1,2)	APR-JUL	5187	6977	7790	102	8603	10393	7618
	APR-SEP	5570	7399	8230	102	9061	10890	8051
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	7827	15304	18700	86	22096	29573	21650
	APR-SEP	8782	17184	21000	86	24816	33218	24360

LOWER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

LOWER SNAKE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
LOWER SNAKE, GRANDE RONDE	10	76	106

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

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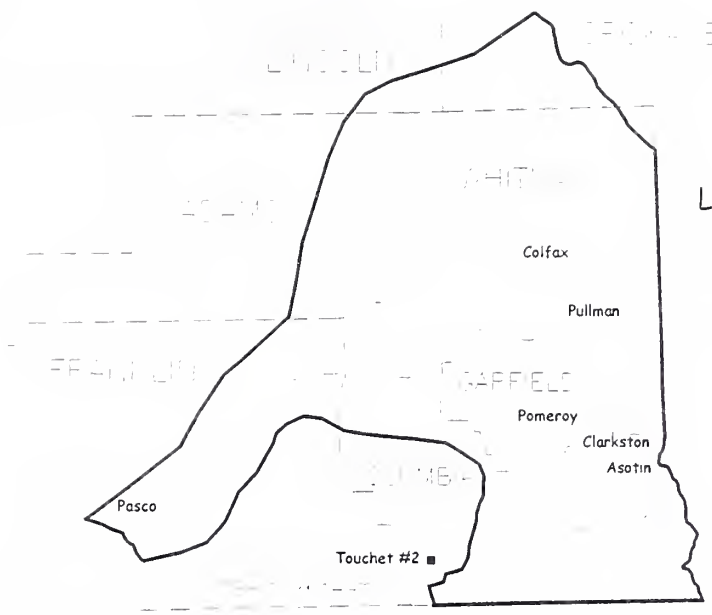
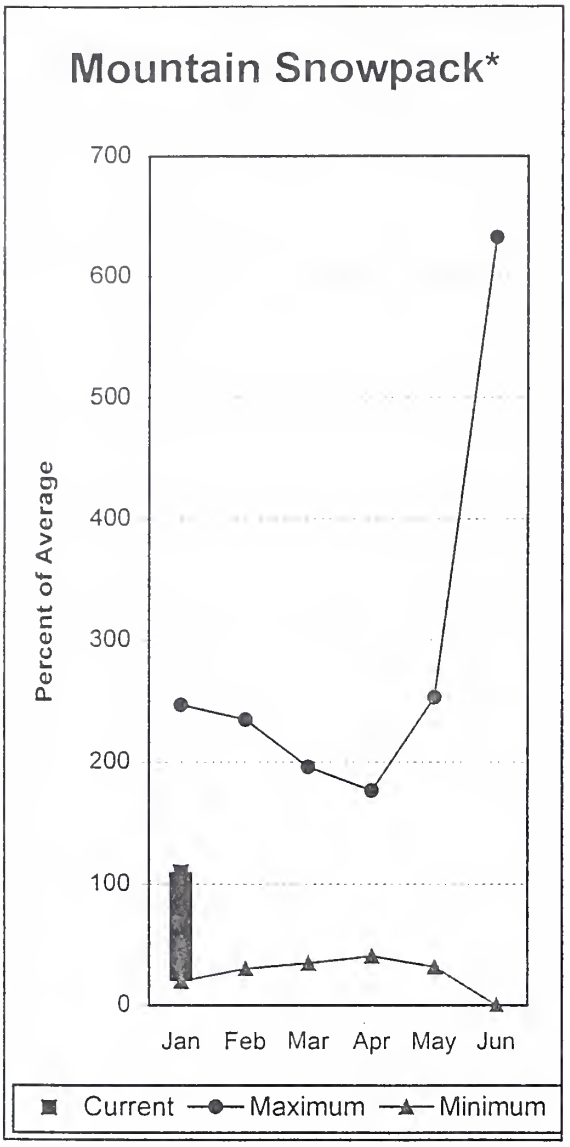
(2) - The value is natural flow - actual flow may be affected by upstream water management.

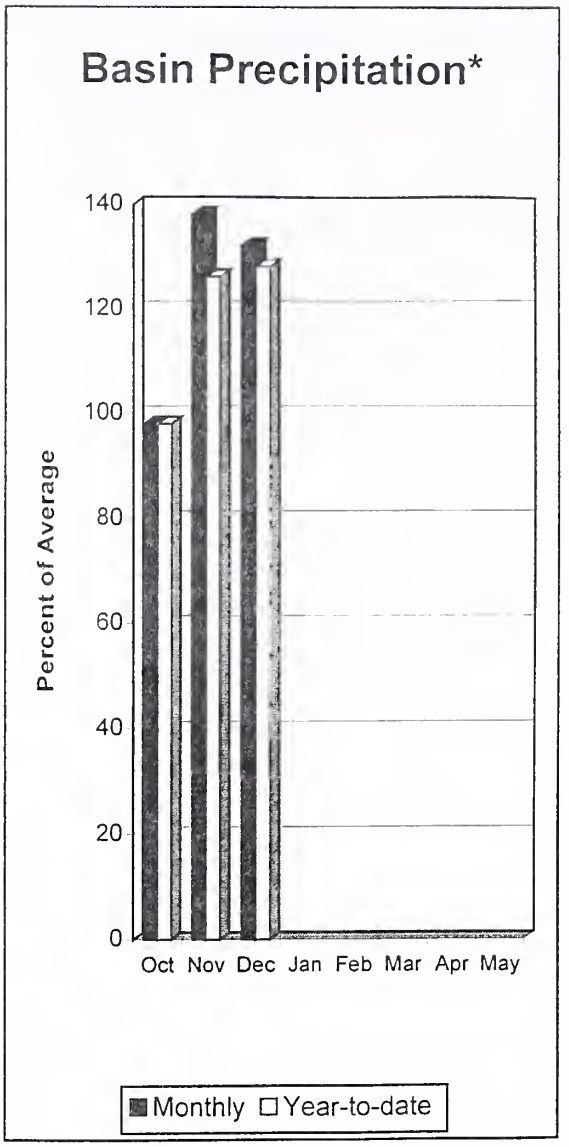


LOWER SNAKE RIVER BASIN
Percent of Average
January 1, 2000

Snowpack - 106%
Precipitation - 136%

Cowlitz - Lewis River Basins





*Based on selected stations

All streams within the basin are forecasted to receive near normal flows for the coming summer. December average streamflow for Cowlitz River was 142% and 135% for Lewis River. December precipitation was 132% of average and the water-year average was 128%. January 1 snow cover for Cowlitz River was 95%, and Lewis River was 124% of average. The Paradise Park SNOTEL recorded the most water content for the basin with 33.3 inches of water. Average January 1 water content is 23.6 inches. Average temperatures were 3-4 degrees above normal during December.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
LEWIS at Ariel (2)	APR-JUL	735	922	1050	100	1178	1365	1053
	APR-SEP	884	1078	1210	100	1342	1536	1206
	APR-JUN	636	813	933	100	1053	1230	935
COWLITZ R. bl Mayfield Dam (2)	APR-SEP	1111	1652	2020	103	2388	2929	1970
	APR-JUL	975	1448	1770	102	2092	2565	1731
	APR-JUN	829	1234	1510	102	1786	2191	1477
COWLITZ R. at Castle Rock (2)	APR-SEP	1993	2390	2660	100	2930	3327	2667
	APR-JUL	1738	2085	2320	100	2555	2902	2325
	APR-JUN	1500	1798	2000	100	2202	2500	1995
KLICKITAT near Glenwood	APR-JUN	76	98	112	102	126	148	110
	APR-SEP	98	125	143	102	161	188	140
COLUMBIA R. at The Dalles (2)	APR-SEP	68756	86228	98100	99	109972	127444	98982
	APR-JUL	58932	73858	84000	99	94142	109068	84760
	APR-JUN	47919	59995	68200	99	76405	88481	68925

COWLITZ - LEWIS RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

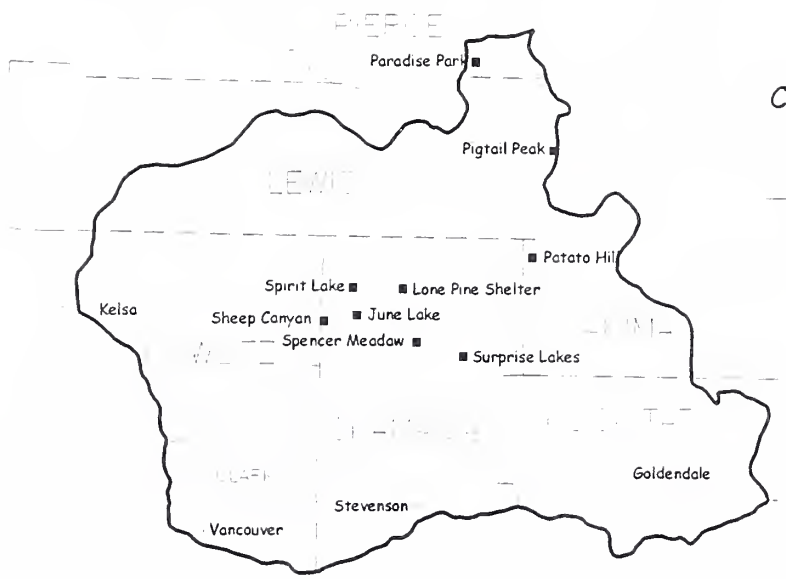
COWLITZ - LEWIS RIVER BASINS
Watershed Snowpack Analysis - January 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
LEWIS RIVER	4	81	124
COWLITZ RIVER	7	58	95

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

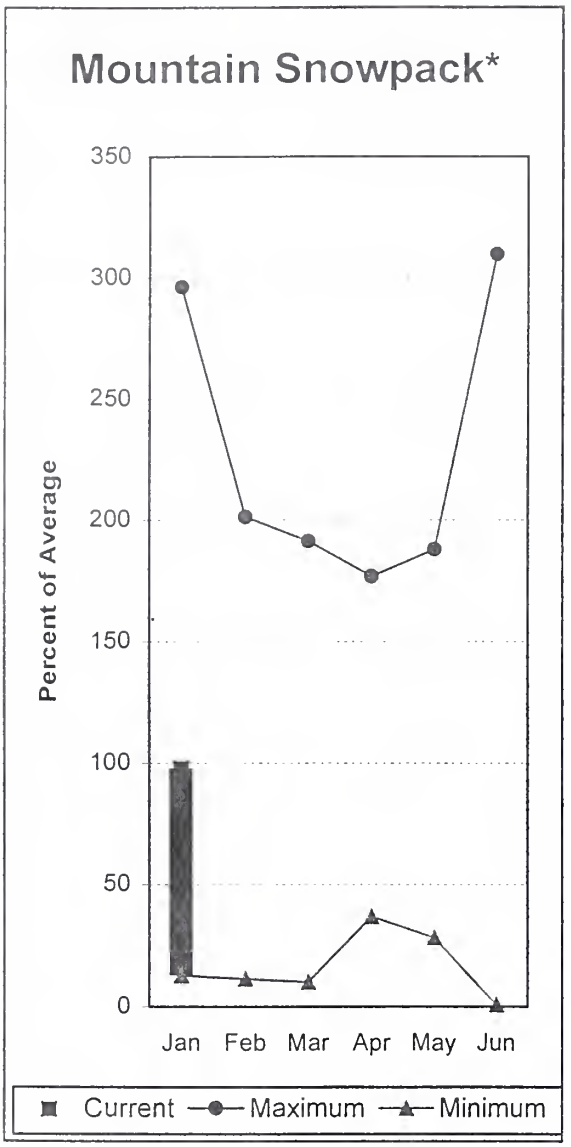
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

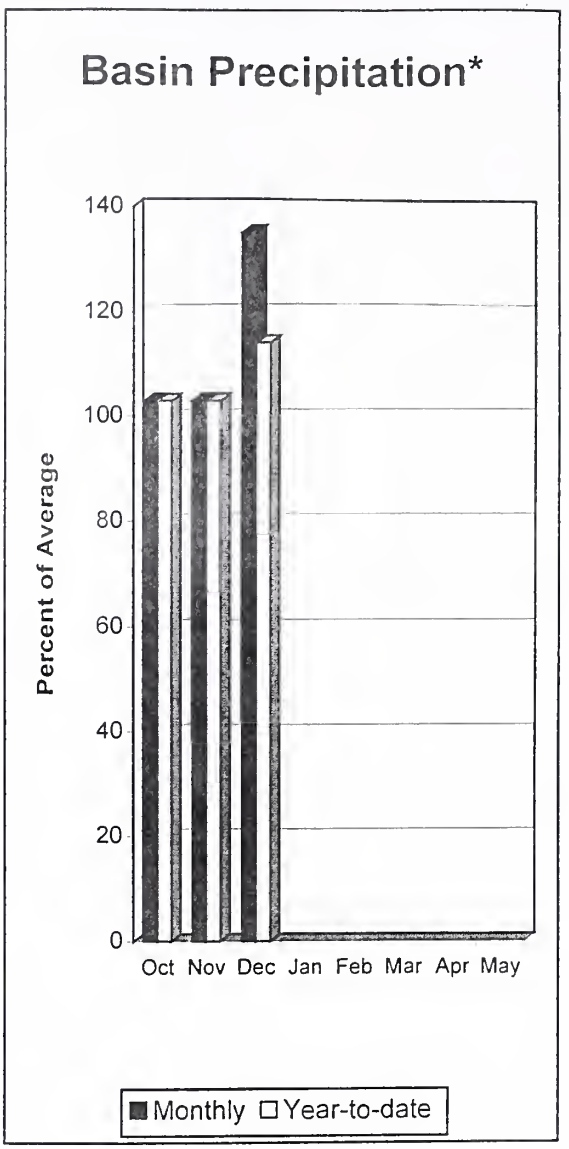


COWLITZ-LEWIS BASIN
Percent of Average
January 1, 2000

Snowpack - 110%
Precipitation - 128%

White - Green River Basins





*Based on selected stations

Summer runoff is forecast to be near normal for both Green River and White River near Buckley. January 1 snowpack was 104% of average in both White River and Puyallup river basins and 87% in Green River Basin. Water content on January 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 14.9 inches. This site has a January 1 average of 13.5 inches. December precipitation was 135% of average, bringing the water year-to-date to 114% of average for the basins. Average temperatures in the area were slightly above normal.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WHITE near Buckley (1,2)	APR-JUL	318	406	446	100	486	574	447
	APR-SEP	395	495	541	100	587	687	542
GREEN below Howard Hanson (1,2)	APR-JUL	167	231	260	101	289	353	257
	APR-SEP	196	259	288	101	317	380	285
	APR-JUN	149	209	236	101	263	323	234

WHITE - GREEN - PUYALLUP RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

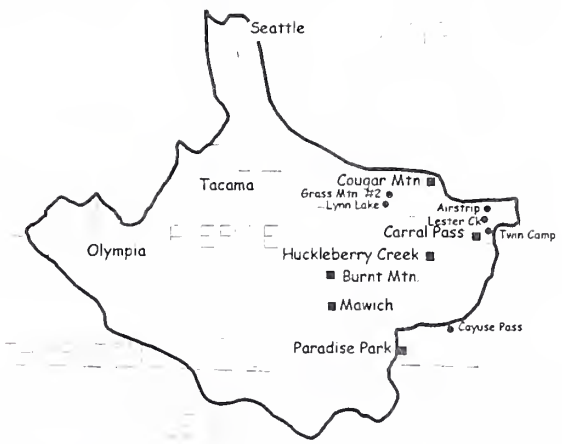
WHITE - GREEN - PUYALLUP RIVER BASINS
Watershed Snowpack Analysis - January 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
WHITE RIVER	3	62	104
GREEN RIVER	6	90	87
PUYALLUP RIVER	3	62	104

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

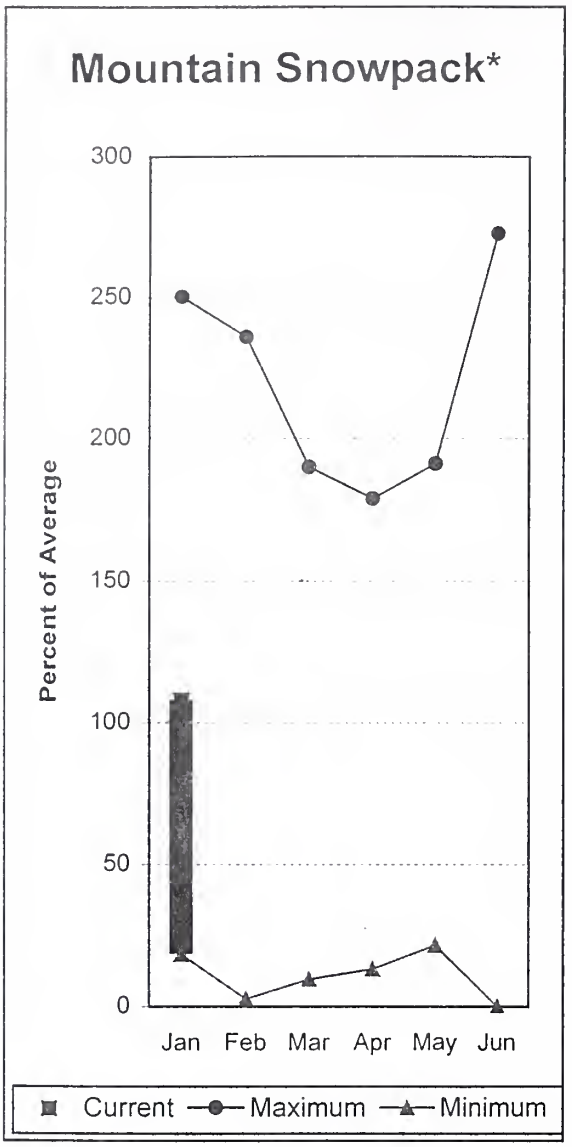
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

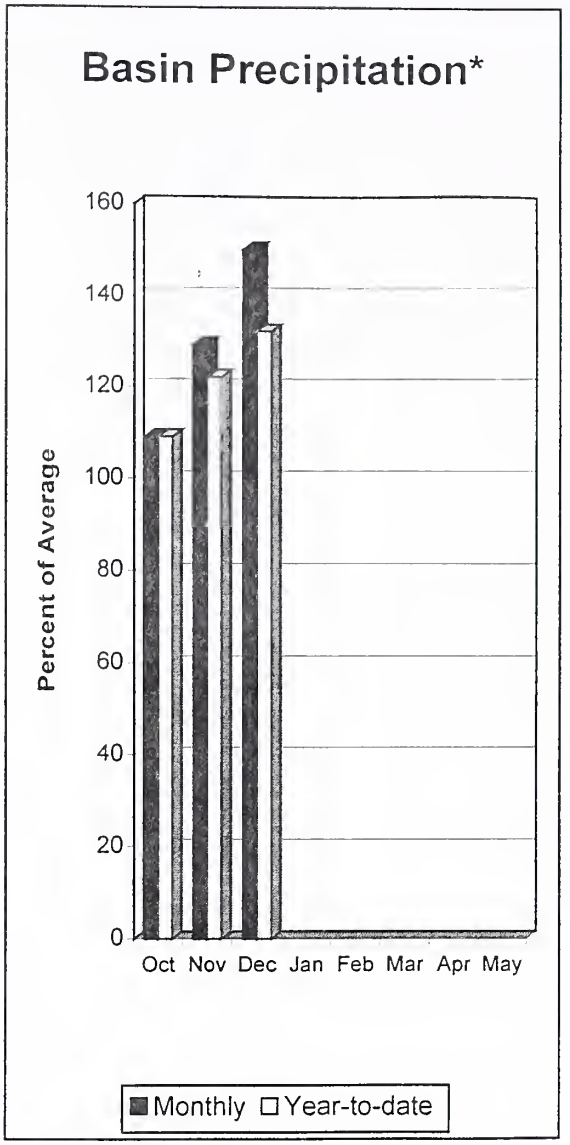


WHITE-GREEN-PUYALLUP BASINS
Percent of Average
January 1, 2000

Snowpack - 98%
Precipitation - 114%

Central Puget Sound River Basins





*Based on selected stations

Forecast for spring and summer flows are: 97% for Cedar River near Cedar Falls; 101% for Rex River; 108% for South Fork of the Tolt River; and 102% for Cedar River at Cedar Falls. Basin-wide precipitation for December was 150% of average, bringing water-year-to-date to 132% of average. January 1 average snow cover in Cedar River Basin was 104%, Tolt River Basin was 119%, Snoqualmie River Basin was 109%, and Skykomish River Basin was 101%. Stevens Pass SNOTEL, at 4,070 feet, had 14 inches of water content. Average January 1 water content is 15.3 inches. December temperatures were slightly above normal for the past month.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
CEDAR near Cedar Falls	APR-JUL	47	63	75	97	86	102	77
	APR-SEP	54	71	82	97	94	111	84
	APR-JUN	47	60	69	101	77	90	68
REX near Cedar Falls	APR-JUL	16.5	23	28	101	32	39	27
	APR-SEP	18.9	26	31	101	35	42	30
	APR-JUN	16.1	22	25	102	29	34	25
CEDAR RIVER at Cedar Falls	APR-JUL	38	64	82	100	100	127	82
	APR-SEP	37	65	85	102	104	132	83
	APR-JUN	43	65	80	100	95	117	80
SOUTH FORK TOLT near Index	APR-JUL	12.8	15.0	16.5	109	18.0	20	15.2
	APR-SEP	14.9	17.5	19.2	108	21	24	17.8
	APR-JUN	11.1	13.0	14.3	109	15.6	17.5	13.1

CENTRAL PUGET SOUND RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

CENTRAL PUGET SOUND RIVER BASINS
Watershed Snowpack Analysis - January 1, 2000

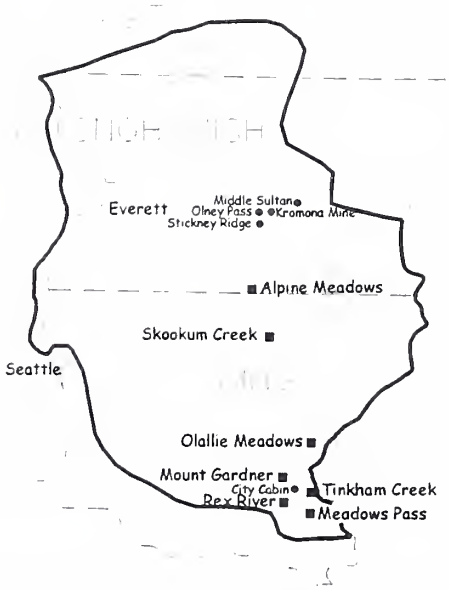
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
CEDAR RIVER	4	65	104
TOLT RIVER	2	122	119
SNOQUALMIE RIVER	4	87	109
SKYKOMISH RIVER	3	76	101

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

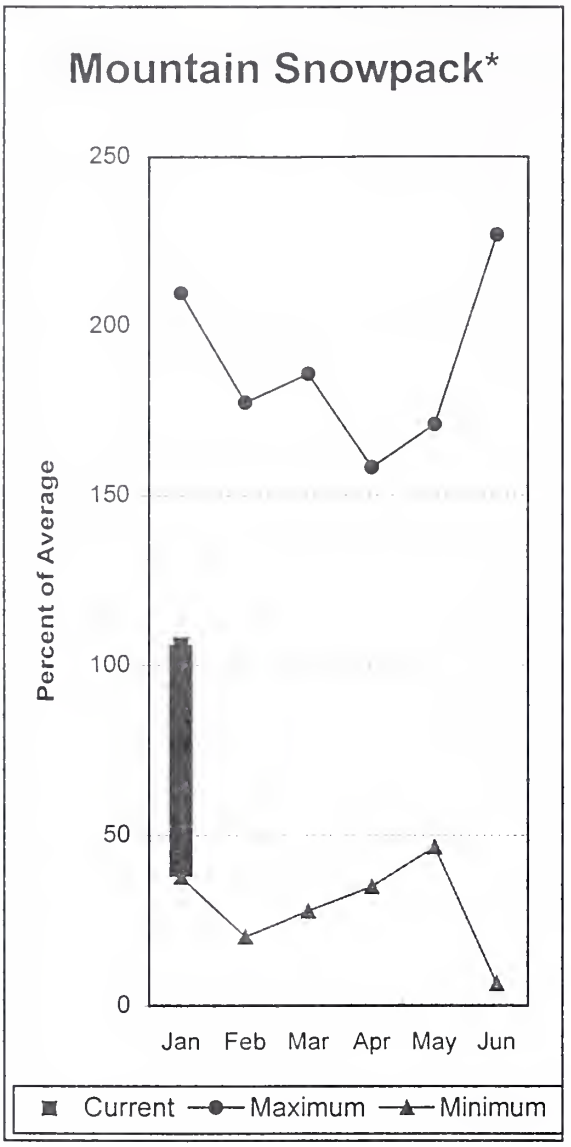
The average is computed for the 1961-1990 base period.

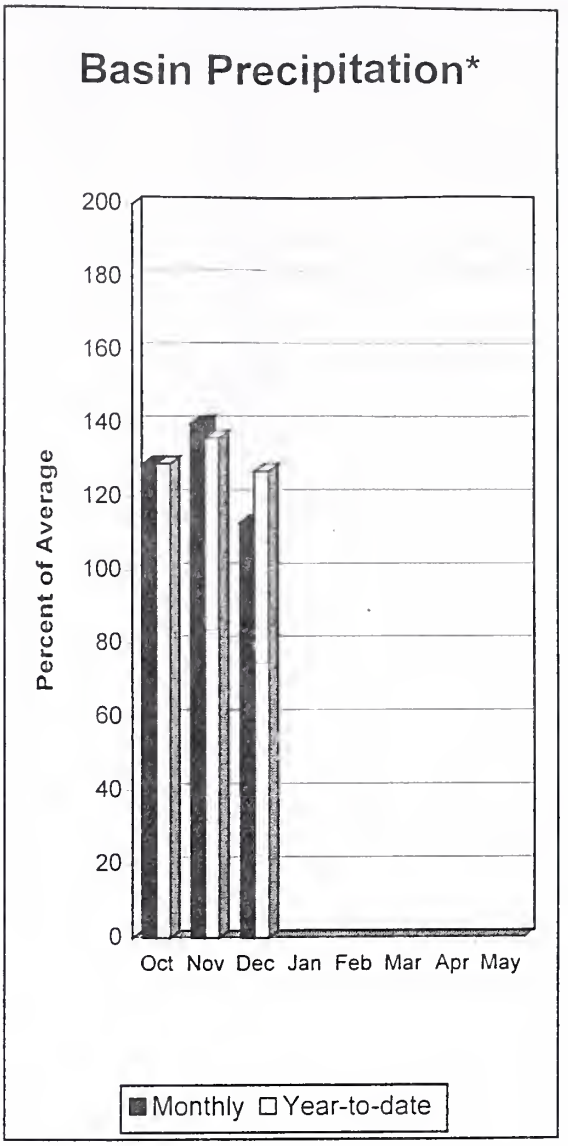
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

CENTRAL PUGET BASIN
Percent of Average
January 1, 2000
Snowpack - 108%
Precipitation - 150%



North Puget Sound River Basins





*Based on selected stations

Forecast for Skagit River streamflow is 105% of average for the spring and summer period. December streamflow in Skagit River was 134% of average. Other forecast points included Baker River at 112% and Thunder Creek at 104% of average. Basin-wide precipitation for December was 113% of average, bringing water-year-to-date to 127% of average. January 1 average snow cover in Skagit River Basin was 102%, and Nooksack River Basin was 108%. Rainy Pass SNOTEL, at 4,780 feet, had 15.6 inches of water content. Average January 1 water content was 15.4 inches. January 1 Skagit River reservoir storage was 161% of average and 90% of capacity. Average December temperatures were slightly above normal for the basin.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
THUNDER CREEK near Newhalem	APR-JUL	208	228	241	105	254	274	230
	APR-SEP	302	325	341	104	357	380	328
	APR-JUN	121	142	156	105	170	191	149
SKAGIT at Newhalem (2)	APR-JUL	1754	1886	1975	105	2064	2196	1879
	APR-SEP	2032	2191	2300	105	2409	2568	2191
	APR-JUN	1350	1457	1530	105	1603	1710	1455
BAKER RIVER near Concrete	APR-JUL	761	860	927	111	994	1093	836
	APR-SEP	1001	1112	1188	112	1264	1375	1064
	APR-JUN	541	619	672	110	725	803	611

NORTH PUGET SOUND RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
ROSS	1404.1	1265.3	1086.9	783.9
DIABLO RESERVOIR	90.6	85.5	85.4	---
GORGE RESERVOIR	9.8	7.7	8.0	---

NORTH PUGET SOUND RIVER BASINS
Watershed Snowpack Analysis - January 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SKAGIT RIVER	2	60	102
BAKER RIVER	2	76	109
NOOKSACK RIVER	2	80	108

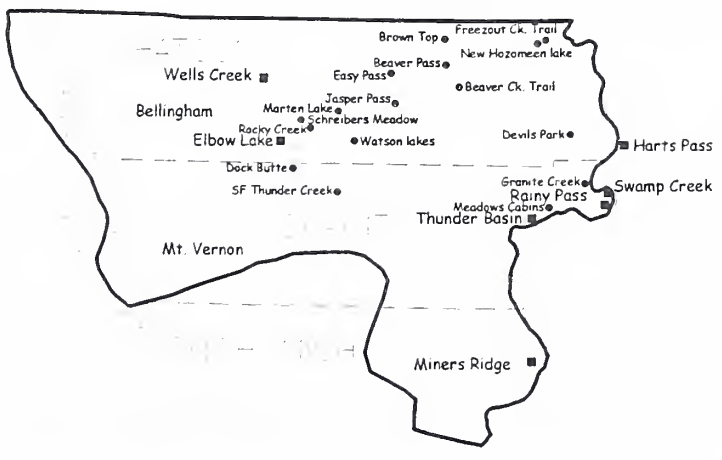
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

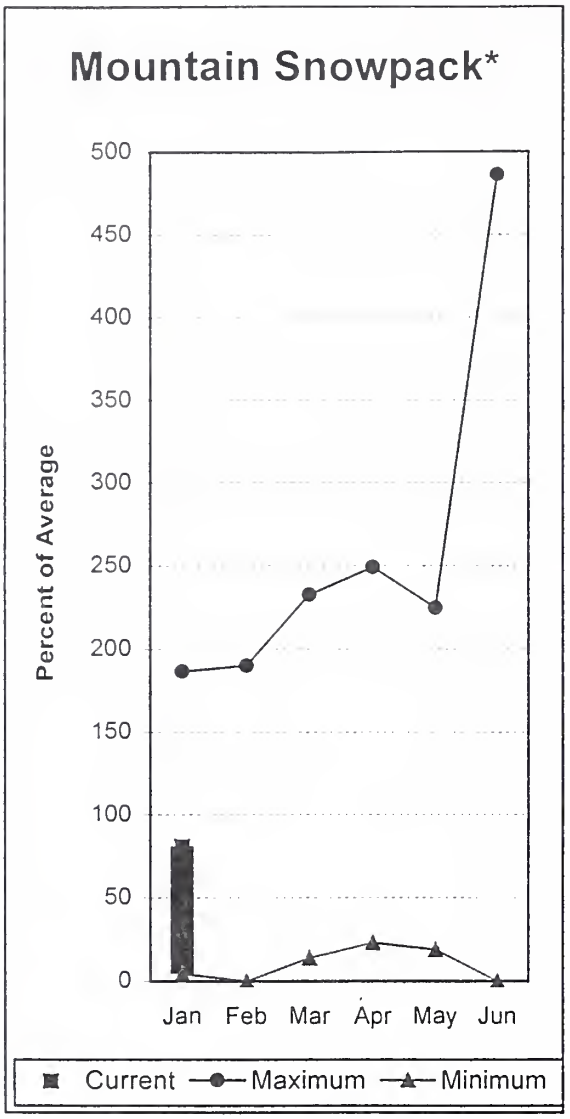
The average is computed for the 1961-1990 base period.

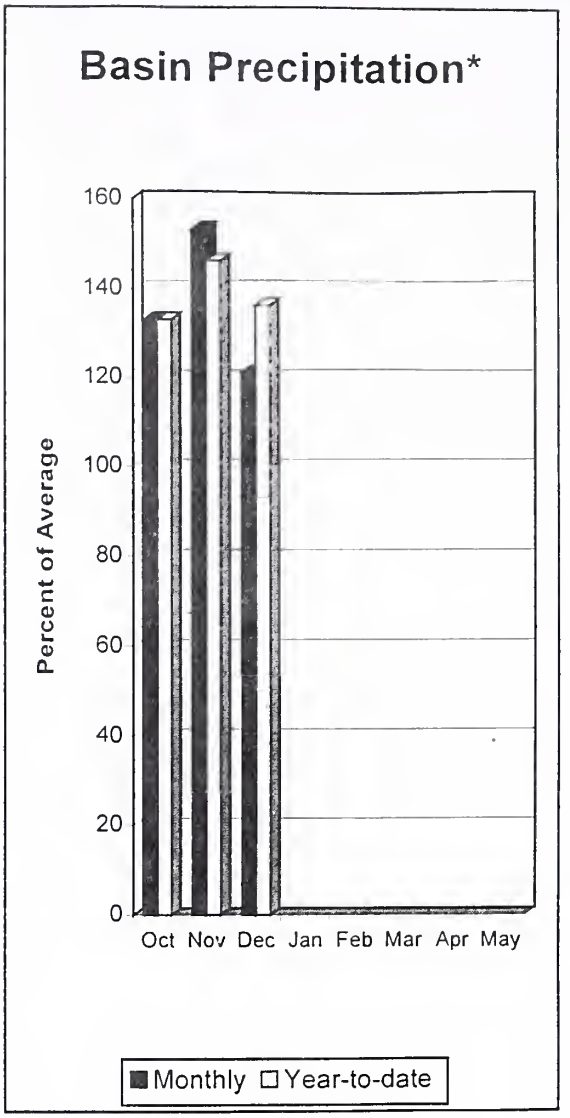
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

NORTH PUGET BASIN
Percent of Average
January 1, 2000

Snowpack - 106%
Precipitation - 127%
Reservoir - 161%







*Based on selected stations

January forecasts average runoff for streamflow in Dungeness River Basin is107% and 109% for Elwha River. Big Quilcene and Wynoochee rivers can expect near average runoff this summer also. December precipitation was 121% of average. Precipitation has accumulated at 136% of average for the water year. December precipitation at Quillayute was 21.63 inches. The thirty-year average for December is 14.62 inches. January 1 snow cover in the Olympic Basin was at 81% of average. The Mount Crag SNOTEL near Quilcene had 9.2 inches of snow-water-equivalent on January 1. Average for this site is 11.3 inches. Temperatures were slightly above average for the month.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
DUNGENESS near Sequim	APR-SEP	123	147	164	107	181	205	153
	APR-JUL	101	121	135	108	149	169	125
	APR-JUN	77	91	101	108	111	126	94
ELWHA near Port Angeles	APR-SEP	411	496	554	109	612	697	510
	APR-JUL	347	415	461	109	507	575	424

OLYMPIC PENINSULA RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

OLYMPIC PENINSULA RIVER BASINS
Watershed Snowpack Analysis - January 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
OLYMPIC PENINSULA	1	44	81
ELWHA RIVER	0	0	0
MORSE CREEK	0	0	0
DUNGENESS RIVER	0	0	0
QUILCENE RIVER	1	44	81
WYNOOCHEE RIVER	0	0	0

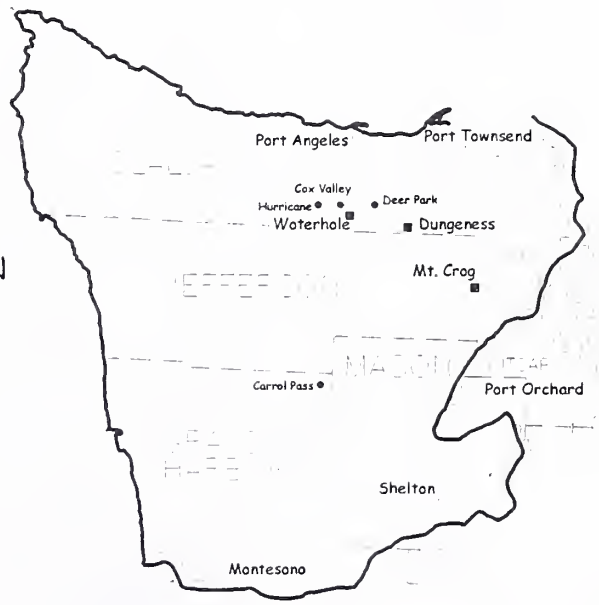
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

OLYMPIC PENINSULA BASIN
Percent of Average
January 1, 2000

Snowpack - 81%
Precipitation - 121%



Issued by

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The Following Organizations Cooperate with the Natural Resources Conservation Service in Snow Survey Work*:

Canada	Ministry of the Environment Investigations Branch, Victoria, British Columbia
State	Washington State Department of Ecology Washington State Department of Natural Resources
Federal	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs
Local	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Power and Light Company Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakama Indian Nation Whatcom County Pierce County
Private	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association Whitestone Reclamation District

*Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

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Washington Basin Outlook Report

Natural Resources Conservation Service
Spokane, WA